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FOR many years before the introduction of the serum treatment of disease the occasional practice of transfusion had made it known that the intravenous or subcutaneous injection of the blood of certain animals into a human being might be followed by results which were not only unpleasant but even at times dangerous. In consequence, the use of animals' blood for transfusion fell into disuse, and on the rare occasions on which the operation was practised human blood was employed.

Soon after the introduction and universal acceptance of the serum treatment of diphtheria in 1894, a method of treatment which was speedily extended to other bacterial diseases, it was noticed that in a considerable number of cases certain symptoms, of which the most obvious was a cutaneous eruption, followed the injection of the serum. A considerable body of facts concerning these symptoms was quickly collected. The frequency with which they occurred, the almost constant presence of a latent period, the details of the symptoms, and so forth, were ascertained and recorded. But no special significance was attached to them until, in 1905, it was pointed out by von Pirquet and Schick.[23] What that is and what it has led to it will be part of my purpose to explain later. At present I will only remind you that to these writers we owe the name "Serum sickness" (die Serumkrankheit), a term which is very convenient to indicate the group of symptoms which reveal the disease.

Before I proceed to discuss any of the questions which are raised by a consideration of the facts of serum sickness, it will be necessary for me to say something about these facts. The observations I present are the outcome of a 22 years' familiarity with the disease as it occurs in the course of the serum treatment of diphtheria, and more particularly from a study of 3502 consecutive cases during the period January, 1898, to June, 1908. I need hardly do more than state that it is the serum which is the primary cause of the disease and not the specific antitoxic principle it contains.

It will be convenient to deal with serum sickness under three heads: as it occurs, first, in the vast majority of persons who undergo an attack after a primary injection of serum, or a series of injections given within a week or so; secondly, in persons who have been re-injected after a lapse of a period of at least 10 days from the primary injection; and, thirdly, in a few persons after a primary injection.

I. SERUM SICKNESS AFTER PRIMARY INJECTIONS.

In the first class of cases the most common symptom is a rash, with or without a rise of temperature. Usually these two symptoms are synchronous; but occasionally the one precedes the other by a few hours.

The Rash.

In the vast majority of cases the rash is one of two kinds, or a combination of the two, urticaria, and a variety of hyperæmic erythema, especially the marginate or circinate. Next in frequency is a papular and macular rash, something like that of measles. Occasionally it consists of large but ill-defined blotches. A scarlatiniform erythema is unusual. Very exceptionally the erythema, which is then usually blotchy, becomes petechial or purpuric; very rarely indeed does it become vesicular or bullous. I have seen ten or a dozen instances of a hæmorrhagic but only one of a bullous serum rash.

The proportions of the two most common forms of rash, urticaria and erythema marginatum, vary in different series of cases.

Thus, Rolleston,[26] in 1905, referring to a paper by Stanley[32] on antitoxin rashes, published in 1902 (and both these writers dealt with serum-sickness as they saw it in the hospitals of the Metropolitan Asylums Board), writes: "At that time a circinate erythema, associated with pyrexia and constitutional disturbance, was more common than any other eruption; next most frequently urticaria was met with. Now, exactly the reverse holds good."

At the present time (1917) I should say that for some years past there has not been so marked a difference in the proportions of the two rashes as Rolleston found, and that urticaria slightly preponderated.

The fact that the rash is so often urticarial or of the form of erythema marginatum is not without significance, as will appear later. The rash sometimes, but by no means always, appears first at the seat of injection, and after a few hours comes out on other parts or universally. It has a special liking for the extremities, and particularly their extensor surfaces. It may be limited to the skin round the injection puncture. The duration of the rash is very variable, from a few hours to a few days. Commonly it lasts three or four days. I have known it to continue for over a fortnight, even for 17 days.

I have said that the rash is usually one of two kinds, or a combination of the two. Concerning the combination a curious fact may be mentioned. It is not at all uncommon to see two separate rashes, parted by an interval during which the skin is quite free from eruption. Both the rashes may be urticarial or some form of erythema; or one rash may be urticaria and the other erythema; the last is the most frequent combination. But if one of them is urticaria and the other erythema, the urticaria almost invariably presents itself first, a sequence which was pointed out by Rolleston. The longest interval I have met with has been 12 days. Usually it is less than a week. There may be pyrexia with both or only one of the rashes.

Another curious fact is that a solitary injection of serum may give rise to two and even three rashes, distinct as to their nature and date of appearance. I have elsewhere suggested that this phenomenon might be due to the practice which obtains of mixing the sera of different horses, partly to provide for use a serum of fairly constant antitoxic value, and partly to dilute a serum which might prove to be unwontedly irritating. It is known that the serum of one horse is prone to produce urticaria, while that of another will give rise to some form of erythema. As a rule urticaria comes out earlier than any other form of rash; so that if a mixed serum gives rise to two rashes the urticaria will appear first.† On the other hand, the second of the two rashes may, though rarely, be urticaria; and urticaria may appear as the first and only rash at a later period than it usually does.

The rashes, but especially the urticaria, of serum sickness may be accompanied by such other symptoms as are found with like rashes due to other causes. Thus itching is very common; and, if the rash is profuse, there may be considerable, though transient, œdema of the skin. Von Pirquet and Schick met with œdema apparently much more frequently than I have done. According to them it can, when not very obvious, be demonstrated by the increase in the weight of the patient while the œdema is present. During this period the excretion of urine is diminished. In my experience obvious œdema is rare, and is to be seen only in cases in which the rash is very profuse.

A rash occurs in rather more than one-third of the cases injected; but inasmuch as a considerable number of cases of diphtheria are fatal before a rash has time to make its appearance the incidence is more accurately determined by calculating it upon the cases which recover. Of 8726 recoveries amongst 10,000 consecutive cases of diphtheria I found that in 3502, or 40·1 per cent., a rash occurred. But if the deaths are included the percentage incidence is 35·02.

Other Symptoms.

The rash is often accompanied by pyrexia. Its degree bears no constant relation to the character or extent of the rash; but a rash seldom persists for more than two or three days without some elevation of the temperature. In a severe case the fever may go on for ten days, a fortnight, or longer. The temperature chart is usually of the intermittent type, and seldom shows a very high degree of pyrexia. Occasionally one meets with cases in which there is reason for believing that an attack of serum sickness shows itself by fever without a rash; but such cases are neither common nor, except in healthy persons who have received the serum as a prophylactic, easy to diagnose, and I have excluded them from my statistics.

In some of the more severe cases there is moderate enlargement of the glands, especially those of the neck; but this enlargement is seldom seen in mild cases. There may also be tonsillitis. Von Pirquet and Schick have demonstrated that during the illness there is marked leucopenia due to a

* Founded upon the annual oration delivered before the Hunterian Society.

† This explanation, however, is not the true one. It has been shown by H. H. Dale and P. Hartley (Biochem. Jour., 1916, x., 408) that each of two different proteins in the serum can produce a separate reaction and that the latent periods of these reactions differ in length of time. This fact appears to afford a clue to the interpretation of the phenomena described above.

diminution in the number of the polynuclear cells. According to Rolleston[27] the blood pressure is, as a rule, unaffected when the rash appears early, but when the rash is late it may rise. His observations were made while the rash was out in patients who were convalescent from diphtheria. This latter fact would vitiate the conclusions so far as serum sickness is concerned.

Perspiration is usually a prominent symptom in all but the mildest cases. Not infrequently, too, there is albuminuria, and vomiting is not uncommon.

Complications.

These, then, are the usual symptoms of an ordinary attack of serum sickness; to them are sometimes added others which, by analogy with other diseases, may be termed complications. The most frequent of these is one which usually goes by the name of "joint pains," but which is, I have no doubt, an arthritis. It occurred in 376 of the 8726 above-mentioned cases of diphtheria—4·3 per cent. It is nearly always accompanied by a rash, and usually also by pyrexia. Rash and arthritis may coincide, or the former may precede the latter by an interval of a few days, in which case the rash is usually urticaria.

The joints affected are commonly the wrists, elbows, ankles, and knees; but not seldom those of the hands, shoulders, and hips are involved. In one case and another there is hardly a joint which I have not seen affected, including such as the sterno-clavicular and the temporo-maxillary. In some cases there is swelling, which is rarely extreme. In the majority of the cases, however, as the name I have mentioned above implies, there is only pain in some of the joints, with stiffness but without swelling. Occasionally the pain appears to be seated in the periarthritic structures rather than in the joints themselves, and it may also appear to be located in the fascia. In the case of a young woman, aged 20, who was under my care and who said that she was subject to pains in the loins, there was severe lumbago, with rash and pyrexia.

The arthritis seldom persists for longer than two or three days, and very rarely recurs. In only one of the 376 cases was there a relapse; it was that of a boy, aged 8 years, who suffered from multiple arthritis of four days' duration. A fortnight later there was well-marked inflammation of the right knee. Suppuration of a joint is very rare; I have met with it only twice. One of the cases was one of the series of 376. In both instances there was a pyæmic focus present before the arthritis set in. One patient was the subject not only of diphtheria but also of severe scarlet fever with a sloughing throat; in the other the cervical lymphatic glands were suppurating. In each instance I think it almost certain that the inflamed joint was infected, through the circulation, from the pyæmic focus.

I have never met with a case of the arthritis of serum sickness in which the heart was involved, as happens in rheumatic fever; and I know only of one recorded case, namely, that reported by Rosenhaupt[30] in 1905, in which there was pericardial effusion.

One or two rare complications remain to be mentioned. In a very few cases I have seen œdema of the scrotum, and occasionally also of the penis, lasting from one to eight days. The œdema occurred independently of a rash on the part affected and of œdema elsewhere. In three or four of the cases I suspected orchitis, but could not be certain of it because of the scrotal swelling. All the patients were children.

In a very few cases, three or four altogether, I have observed transient hæmaturia. But I have never met with a nephritis due to serum, unless one, of five days' duration, may be accounted as such, which occurred in a girl of 10 years, who had just recovered from an attack of post-scarlatinal nephritis. The urine had been free from albumin for 18 days before the antitoxin was given. But the post-serum nephritis may have been a recrudescence of the renal lesion due to scarlet fever, an event which occasionally takes place. Otherwise I have no clinical evidence to show that serum injures the kidneys. On the other hand, I have observed at least 18 cases in which serum was given to patients who were at the time the subject of acute or chronic nephritis, and no effect, good or bad, was produced on the kidneys, so far as clinical observation could determine.

Incidence.—Latent Period.

So far, I have been dealing with the ordinary form of serum sickness. Before I pass on to consider the unusual varieties there are one or two general points to which I wish to draw your attention.

It might be supposed *a priori* that if a number of persons of both sexes and of various ages were to be injected with serum the cases of serum sickness which occurred would be equally distributed amongst them. But it is not so, at any rate so far as my figures go. An analysis of the cases shows that the disease is more frequent in the female than in the male sex, and the difference in the incidence is most marked in patients over ten years of age. As regards those cases of sickness of which the chief sign is a rash, children are more frequently affected than adults, especially in the male sex; for in the female the difference is not striking. (See Table II.) In respect of arthritis, however, the reverse is the case, and children are less liable to be attacked than adults. (See Tables I. and II.)

Another point is that the frequency of the disease varies directly with the volume of serum injected. I am unable to prove this from *my* cases, because the serum has been given

TABLE I.—*Age-incidence of Serum Sickness (Rash and Joint-pains) occurring amongst 10,000 Consecutive Cases of Diphtheria Treated with Antitoxic Serum.*

Males.

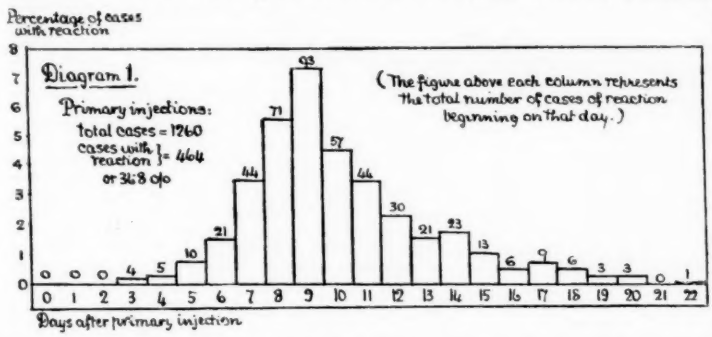
Ages.	No. of cases.	Rashes.			Joint-pains.		
		Cases.	%		Cases.	%	
0-	2266	788	34·7	23·2	35	1·5	2·1
5-	1580	499	31·5		48	3·0	
10-	489	153	31·2	31·2	24	4·9	5·3
15-	148	46	31·0		10	6·7	
20-	115	27	23·4		9	7·8	
30-	44	5	11·3		1	2·2	
40-	12	1		6·6	0		0·0
50-	2	0			0		
60-	1	0			0		
Total ...	4657	1519	32·6		127	2·7	
Females.							
0-	2234	819	36·6	36·2	32	1·4	2·6
5-	1921	689	35·8		78	4·0	
10-	642	254	39·5	39·6	60	9·3	9·8
15-	209	84	40·1		24	11·4	
20-	227	90	39·6		32	14·0	
30-	81	33	40·7		17	21·0	
40-	21	9		48·2	4		20·6
50-	6	3			1		
60-	2	2			1		
Total ...	5343	1983	37·1		249	4·6	
Total: Males and Females.							
All ages..	10000	3502	35·0		376	3·7	

TABLE II.—*Age-incidence of Serum Sickness (Rash and Joint-pains) occurring amongst the Non-fatal Cases of Table I.*

Males.

Ages.	No. of cases.	Rashes.			Joint-pains.		
		Cases.	%		Cases.	%	
0-	1853	788	42·5	39·2	35	1·8	2·5
5-	1424	499	35·0		48	3·3	
10-	471	153	32·3	32·3	24	5·0	5·5
15-	144	46	31·9		10	6·9	
20-	111	27	24·3		9	8·1	
30-	44	5	11·3		1	2·2	
40-	11	1		7·6	0		0·0
50-	1	0			0		
60-	1	0			0		
Total...	4060	1519	37·8		127	3·1	
Females.							
0-	1796	819	45·5	42·8	32	1·7	3·1
5-	1724	689	39·9		78	4·5	
10-	609	254	41·7	41·4	60	9·8	10·3
15-	206	84	40·7		24	11·6	
20-	224	90	40·1		32	14·2	
30-	80	33	41·2		17	21·2	
40-	20	9		48·2	4		22·2
50-	5	3			1		
60-	2	2			1		
Total...	4666	1983	42·4		249	5·3	
Totals: Males and Females.							
All ages..	8726	3502	40·1		376	4·3	

in unit and not in c.cm. doses. The volume containing the same number of units has varied from time to time, and the records state the doses in units and not in c.cm. Other observers have investigated this question and have, as a rule, found that the larger the volume for the average dose the higher the frequency of the rash. Weaver,[34] for instance, gives figures which show this clearly, and Rolleston states that in his series of cases "the frequency of rashes and other serum phenomena are in direct relation to the size of the dose and in inverse relation to the character of the diphtherial attack." It must, however, at the same time be remembered that the serum of some horses is more provocative of serum sickness than is that of others—a factor which would have a disturbing influence on the conclusions when the number of cases analysed was scanty. Still, the evidence available goes to show that the incidence of the disease depends upon the volume of serum injected. As children receive a relatively larger volume of serum than do adults, they may perhaps be expected more readily to fall ill of serum sickness.


Percentage of cases with reaction
Diagram 1.
Primary injections:
total cases = 1260
cases with reaction } = 464
or 36·8 o/o
(The figure above each column represents the total number of cases of reaction beginning on that day.)
0 0 0 4 5 10 21 44 71 93 57 44 30 21 23 13 6 9 6 3 3 0 1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
Days after primary injection

But the most important point is that in the vast majority of cases there is a distinct period, free from any symptoms attributable to the serum, between the injection of the serum and the onset of the sickness. Of 464 consecutive cases which I have analysed the rash appeared in 3 to 22 days after the first injection. In 404 of these cases the duration of the latent period was 6 to 14 days. In only 19 cases was it shorter than 6 days. (See Diagram 1.) The most common length of the period was 9 days (93 cases). These results agree almost exactly with those which have been arrived at by other observers. But though it so happened that in this particular series of 464 no case showed symptoms earlier than the third day, yet in a very few cases outside the series I have observed a rash to come out the day after or two days after an injection; and in one instance there were vomiting and urticaria three and a half hours after. In none of these cases were there any other reasons for supposing that the patient had been injected with serum on a previous occasion.

So much for serum sickness as it occurs in most cases after a primary injection or series of injections. After a latent period of several days, commonly 6 to 15, there is an attack of fever with a rash, occasionally accompanied or followed by arthritis. It will be convenient when I am considering the other varieties of the disease to designate the usual form as the "normal reaction" to serum.

II. SERUM SICKNESS IN RE-INJECTED CASES.

I will now turn to a study of the illness as it shows itself in persons who have been treated with serum previously.

After the serum treatment of diphtheria and certain other diseases had been in vogue for a few years it came to be noticed that when a person was injected with serum a second time some weeks or months after the first injection an attack of serum sickness might occur which differed in one way or another from the usual form which I have described above. These second injections were given for relapses or second attacks of diphtheria, or in cases of scarlet fever or diphtheria which had received a prophylactic injection some time previously.

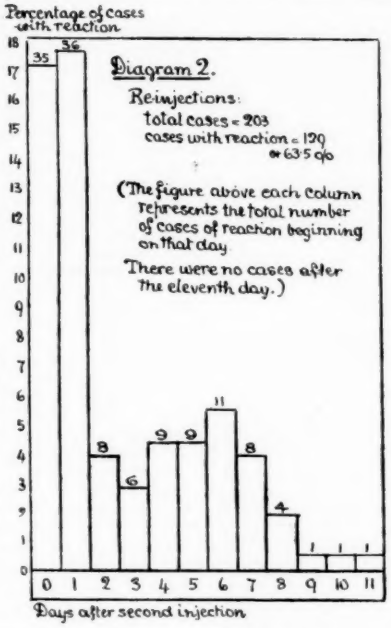
The first published cases of this unusual form of illness seem to have been two recorded by Hartnung[17] and one by Denys and Leclef[8] in 1896. I submitted an account of three cases to the Antitoxin Committee of the Clinical Society, and they were published in the Committee's report[6] in 1898. But no particular significance was attached to the facts recorded, chiefly, I suppose, because they were few and far between. Opportunities for re-injection under the circumstances I have mentioned presented themselves only now and again, at any rate, in this country.

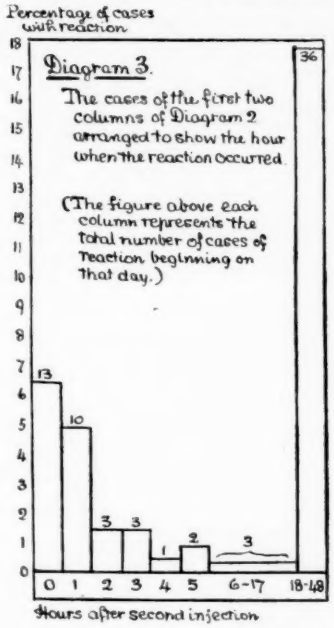
At first I was under the impression that the abnormal symptoms were due to some peculiarity of the particular brand of serum used. But as time went on more cases of a like nature came under observation, and it became clear that the abnormal reactions were to be met with almost solely in patients who had been re-injected for an actual or supposed relapse or second attack of diphtheria. I drew attention to these cases in an article on diphtheria published in 1900[13] and also in an address on serum therapy which I gave at the Oxford meeting of the British Medical Association in 1904.[12] But I was unable to give an explanation of them. The experimental work which bore on the subject had only recently been made known, and I was not aware of it. In 1905 von Pirquet and Schick brought out their book, "Die Serumkrankheit," and in it these curious phenomena were described in detail, and an attempt was made to explain them by reference to the experimental work of Richet,[25] Arthus,[1] and others.

Now before I describe in what way serum sickness in re-injected persons differs from the ordinary form of the disease I must make it clear what is meant in this connexion by a re-injected person.

I have already stated that these abnormal reactions were noticed in persons who received a second injection of serum some time after the first. It is a very common practice in serum treatment to give several injections. As a rule, they are administered at short intervals, usually of a day or two, and the series of injections may extend over several days. But it must be particularly pointed out that, in persons treated in such a manner, abnormal reactions are not to be expected after any of the serial injections. Curdie[7] made a careful study of these cases and showed that doses repeated at short intervals were not followed by abnormal reactions.

But it is quite a different matter when between the primary injection, whether a single one or the first of a series given at short intervals, and the secondary injection there is an interval of at least ten days—that is to say, when the interval is longer than the ordinary latent period of the normal reaction. This important fact was elicited and emphasised by von Pirquet and Schick.


Percentage of cases with reaction
Diagram 2.
Reinjections:
total cases = 203
cases with reaction = 129
or 63·5 o/o
(The figure above each column represents the total number of cases of reaction beginning on that day.
There were no cases after the eleventh day.)
35 36 8 6 9 9 11 8 4 1 1 1
0 1 2 3 4 5 6 7 8 9 10 11
Days after second injection


Percentage of cases with reaction
Diagram 3.
The cases of the first two columns of Diagram 2 arranged to show the hour when the reaction occurred.
(The figure above each column represents the total number of cases of reaction beginning on that day.)
13 10 3 3 1 2 3 36
0 1 2 3 4 5 6-17 18-48
Hours after second injection

When, therefore, I speak of a re-injected person I mean one who has received serum treatment a second time after the lapse of a period from the first injection which is at least equal in length to the latent period of the normal reaction.

During the 16 years ending Dec. 31st, 1912, I had under my observation 203 patients who received serum treatment a second time for a relapse or second attack of diphtheria, actual or supposed, and it is of these patients I am now about to write. In 129 of them there was an attack of serum sickness after the re-injection.

Reaction in Re-injected Persons.

In a re-injected person the reaction may be a normal one, both as regards the latent period and the symptoms. But that is not common; usually the reaction departs from the normal, and its abnormality may be shown in one of three ways or a combination of them. In one the latent period is shortened, in another the attack of serum sickness is unusually severe, while in the third unwonted symptoms are present.

(1) The most common abnormality is *shortening of the latent period*. This is well shown in Diagrams 1 and 2. It is clear from these diagrams that in the bulk of the primarily injected cases the latent period is longer than a week, while in the bulk of the re-injected it is shorter than a week. In the latter group there are only 3 cases with a latent period of longer than eight days—2·3 per cent. of all the cases; while in the first group there are 309, or 66·5 per cent., with a latent period of over eight days. This is a very striking difference. But a still more striking difference is to be found in the fact that in 71 of the re-injected cases in which a rash occurred, or 55 per cent., the latent period was under two days. I have already stated that in ordinary serum sickness instances of latent periods of less than three days are rare.

Von Pirquet and Schick divided the cases with curtailed latent periods into two classes—those in which it was less than 24 hours and those in which it was longer than 24 hours but shorter than 7 days. To the former they applied the term "immediate reaction," to the latter "accelerated reaction." But there is a sharp distinction between these two classes which does not appear in Diagram 2. For of the 35 cases in which the latent period was less than 24 hours, in 32 it was less than six, and in 23 of the 32 less than two. In 3 cases, indeed, the latent period was absolutely abolished and the symptoms came on immediately, while in 10 they arose after an interval varying from 10 to 60 minutes. It is probable that in a few of the 36 cases in which the reaction was stated to have set in the day after the injection the latent period was somewhat under 24 hours. Probably, too, after six hours the cases were spread fairly evenly over the period 6 to 48 hours. There appears, therefore, to be a pronounced difference between the numbers of cases occurring during the first six hours, and especially the first two, and those occurring subsequently, so that I should be inclined to limit the term "immediate reaction" to all instances in which the latent period was less than six hours. (See Diagram 3.)

It should be mentioned that the same patient may undergo more than one reaction. Thus, 25 had both an immediate and an accelerated reaction, and 1 had not only both these but also a normal reaction. (See Table III.) From this table it appears that the accelerated reaction is the most frequent. In 105 cases the patient underwent an accelerated, in 35 an immediate, and in 22 a normal reaction, alone or combined.

TABLE III.

Immediate reaction only ...	8	Accelerated and normal reactions	5
Accelerated	74	All three reactions	1
Normal	15		129
Immediate and accelerated reactions	25		
Immediate and normal reactions	1		

(2) The second abnormality is exhibited by *unusual severity of the attack*. This may occur irrespective of the length of the latent period. In these cases the rash, usually urticaria, often with gigantic wheals, is very profuse and comes out with extraordinary celerity. The mucous membranes of the mouth, nose, pharynx, larynx, and possibly also of the stomach, seem to be invaded. The tongue may be swollen and the respiration embarrassed, and there may be vomiting and epigastric pain. In a few cases the patient is seized with faintness and muscular weakness. The temperature may for a short time be high. Usually these most unpleasant, not to say threatening, symptoms pass off as quickly as they arose. Occasionally there is an exceptionally smart attack of arthritis. Fortunately this class of cases is by no means numerous. Those with a profuse urticarial rash, involvement of the mucous membranes, dyspnœa, and prostration, are prone to be associated with absence or extreme shortness of the latent period. But I have never seen arthritis occur earlier than the day after the injection.

(3) Lastly, there are some cases, happily also few in number, in which *unusual symptoms occur*. They are always part of an immediate reaction, and consist of rigors, sometimes severe and prolonged, muscular twitchings, and even convulsions, drowsiness, dyspnœa (not apparently due to urticaria of the larynx), collapse, vomiting, and a high temperature. There may also be abdominal pain and diarrhœa. The rash, always urticaria, may precede or follow these symptoms, which are not all present in every case. Nor are the most severe of them of long duration; but prostration may remain, and it is some time before the patient completely recovers. I have met with eight cases of this description, and all of them recovered.

The vast majority of cases of serum sickness, normal or abnormal, recover completely. I have never met with one which became chronic; but Blain[1] records that of a young woman, aged 22, in whom urticaria, set up by a re-injection six months after the first, lasted for upwards of four months at the least.

The facts I have brought forward in respect of the re-injected cases, the shortening of the latent period, the occurrence of unwonted symptoms, and the greater frequency of severe attacks—that is, when compared with the number of severe cases amongst normal reactions—show that these persons are more susceptible to serum, not only than are others, but also than they themselves were at the time of the primary injection. This increased susceptibility is further shown by the higher frequency of reactions, normal and abnormal, amongst them. Of the 203 re-injected cases 129 underwent a reaction, 63·5 per cent., a figure which is in striking contrast with the 40 per cent. of the primarily injected cases.§

There is some evidence to show—though I cannot say it is strong, for the cases are scanty—that those persons who suffer from an attack of serum sickness after the primary injection are more prone than those who do not to undergo an attack, and especially an unusual attack, after the second. In 188 of the re-injected cases the history of the primary injection is accurately known. Half of these suffered from serum sickness then, and half did not. In 70, or 74·4 per cent., of the former, and in 47, or 50 per cent., of the latter, a reaction occurred after the re-injection. Further, there is a larger proportion of the immediate reactions amongst the former, namely, 26 in 70, 1 in 2½, as against 7 in 47, 1 in 6½, amongst the latter.

Duration of Supersensitive State.—Arthus's Phenomenon.

It is a point of importance as well as of interest to know how long a person will remain in the supersensitive state which has been induced by the primary injection. I have already stated that a person gives no evidence of having been sensitised if he is re-injected during the latent period. The shortest period I have known between the primary and the secondary injection, when the occurrence of an abnormal reaction has demonstrated the supersensitive condition, has been 16 days, both for an immediate reaction and for an accelerated reaction. Both occurred in the same patient; the immediate reaction appeared 10 minutes, and the accelerated reaction two days, after the re-injection.

The answer to the question how long the supersensibility lasts has not yet been furnished, at any rate so far as man is concerned. Possibly [illegible] may last for a person's lifetime. I have known it to be present upwards of seven years after the primary injection.

A boy, aged 10 years, suffering from diphtheria, was admitted to the Eastern Hospital on Oct. 15th, 1904, when he received 12,000 units of antitoxic serum. Eighteen days later there was a rash, followed in three days by arthritis and pyrexia. He was readmitted to the hospital for a second attack of diphtheria on Dec. 4th, 1911. At first the diagnosis of his case was doubtful, but on the 7th distinct membrane appeared, and he received 14,000 units. Half an hour later an urticarial rash came out. Next day there was pyrexia and on the 12th a rash. On the 14th arthritis set in. During the rash and arthritis there was fever.

The patient, therefore, on this occasion underwent an immediate and an accelerated reaction. The reaction was more severe than that which he had exhibited seven years before.

It has been stated by more than one observer that there is an optimum period for the supersensitiveness in persons treated with serum.

Thus, Grysez and Bernard[18] concluded from certain experiments made upon guinea-pigs with the blood and serum of persons who had been injected with horse serum that there is little development of the condition within 36 days of the injection, that the symptoms of abnormal serum sickness are most likely to be evoked from the 37th to the 188th day, and that between the 197th and the 342nd day the supersensitiveness disappears.

But these conclusions are not quite in agreement with what I have noticed in my cases.

‡ In the 25 cases in which there was both an immediate and accelerated reaction there was a distinct interval, usually of at least 24 hours, between the two.

§ It should be added that of recent years not only the anaphylactic but also the normal serum phenomena have been less severe than formerly in cases under my observation, though they are still almost as frequent as they were. This is probably due to certain improvements in the making of the serum.—E. W. G., November, 1917.

Of 45 patients re-injected within 36 days of the first injection, 17, or 37·7 per cent., were supersensitive, and 6 of them showed an immediate reaction, and of 26 injected later than the 188th day 19 were supersensitive, and seven of them underwent an immediate reaction. Twenty-one of these cases were re-injected after the 342nd day, and of these 17 gave signs of supersensitiveness.

My cases therefore afford no evidence of the existence of an optimum period, or that the increased sensibility disappears after any particular length of time.

I have stated that the rash of both the normal and abnormal reaction may be limited to the seat of injection. I shall have occasion later to refer to certain experiments in which supersensitiveness is induced in animals. In rabbits this may be localised. The skin and subcutaneous tissues at sites of former injections become inflamed, and necrosis may follow. This is known as "Arthus's phenomenon." It is very rare in the human subject according to my experience. In fact, I have never met with precisely that phenomenon in man. The nearest approach has been induration at the site of the re-injection in two or three cases in re-injected persons as defined above. In one of these cases there was localised gangrene as a part of an accelerated reaction. I have never met with infiltration at *previous* injection-sites.

III. Abnormal Serum Sickness without Previous Serum Treatment.

It now remains for me to speak of the third of the classes into which I have divided cases of serum sickness. They are to be met with in persons who have never previously been treated with serum. They possess to a marked degree the peculiarities of absence of the latent period and excessive severity of symptoms. It is, indeed, this group which has furnished nearly all the instances of death immediately after an injection of serum.

One of the earliest of these cases was the well-known one of the child of Professor Langerhans,[19] who died suddenly after a prophylactic injection of antidiphthetial serum. This was in 1896. From time to time a case of a similar nature was reported. But no special attention seems to have been paid to them.

About the year 1905, however, the use of horse-serum as a remedy for asthma and hay fever began to be advocated in the United States. Apparently this use of serum was introduced as the result of a chance observation that an injection of serum, given as a prophylactic against diphtheria in a person who happened to be the subject of asthma, was followed by a decided relief of the symptoms of that disease. After a time, however, cases began to crop up in which the administration of serum in asthma and allied affections was almost immediately followed by symptoms which were always extremely serious and in some instances rapidly fatal.

The symptoms are: irritation (sensations of itching and burning), with very acute œdema of the skin and of the mucous membranes of the nose, mouth, and throat; urgent dyspnœa and cyanosis; and foaming at the mouth. In some cases there is a rash, usually urticaria; in others there is not. In fatal cases death has been due to inability to breathe, and there may be convulsions and coma. Respiration stops before the heart ceases to beat. It has been stated that in some cases there has been collapse. But in most of those of which details have been given the respiration and not the circulation has been the first to fail.

The occurrence of these untoward events in asthmatics to whom serum had been administered as treatment of their chronic disease drew attention to the fact that in not a few of the cases in which fatal or alarming results had followed the use of serum either as a remedy for or a prophylactic against diphtheria the patient was the subject of asthma in one of its many varieties, and those persons in whom an attack of asthma is excited by the emanations from the horse seem especially to be prone to fall victims to these evil effects of horse serum.

I may remark in passing that while these tragedies have occurred, and the majority of the victims have been asthmatics, yet some individuals who are subject to that disease, far from suffering any of the alarming symptoms I have mentioned, receive most distinct relief from their asthmatic attacks. In some of them, indeed, even re-injections of serum repeated at long intervals have produced no symptoms of serum sickness. But the immunity from the fits of asthma has proved in most instances to have been only temporary, and Dr. Gillette,[11] who was the first to draw attention to the danger of giving serum to asthmatics, though he himself had received some benefit from its use, has informed me that, in consequence of the failure of the remedy to procure any lasting relief, and especially because of the undoubted risk the asthmatic runs from serum, its use as a remedy for asthma had been abandoned, at any rate in the United States.

Summary.

It will be gathered from what I have said that so far as their susceptibility to horse serum administered by subcutaneous injection is concerned human beings are by nature ranged in three classes. The first consists of those who are unaffected by the serum, and contains the majority of persons. The second consists of those who are so far sensitive that they give a normal reaction, and this class is fairly numerous. The third comprises those who are sensitive to such a degree that they respond with an extraordinary and severe reaction. Fortunately such individuals are comparatively rare, and many of them have exhibited the peculiarity of an asthmatic idiosyncrasy before they have been injected with serum. To these natural classes may be added a fourth, consisting of those who have been artificially rendered oversensitive. While individuals of this class respond abnormally, the reaction is seldom so unusual as is that of the third of the natural classes.

(To be concluded.)

EYE-STRAIN: THE CONDITION OF "BLEPSOPATHIA."[1]

By HAROLD A. DES VŒUX, M.D. Brux.

WHETHER or not the conclusion to which I have been driven by the facts set out in the accompanying table will be generally accepted, it has been arrived at after years of observation and thought in studying some of the common symptoms which one frequently meets with in practice. These symptoms seem as usual in those who are of middle age or even young as in the elderly, and are variously described by the sufferers as being "liver," "heady," "stupid in the head," "good for nothing," "slack." One of the most constant symptoms is headache in a more or less severe degree.

Headache is so common a symptom of general diseases, of blood poisoning, of all acute and most chronic affections that it seems never to be considered as a disease entity in itself, or, in other words, that the pain in the head may have far-reaching results. It is usual when headache is a prominent symptom to attribute the pain to some distant organ, and even migraine until recent years has been regarded as a disease "of the liver" and not as a "nerve storm." When pain is situated in the region of any organ of the body—say the lung, the heart, or the kidney—it is considered as a sure sign of illness or affection of that organ, more especially if accompanied by tenderness. But when pain is concentrated in or about the eye, when the eye is tender on pressure, and when the patient is so sensitive to light that his only comfort is to lie in a darkened room, it is a heresy to consider the eye as a cause of the pain.

Early Observations.

My attention had been drawn for some years to the eye as the only possible cause of the train of symptoms about to be considered, but I obtained no satisfaction either from the patient or his oculist in deciding the question. The patient, very often a young man or woman, declared that the eyesight was perfect, and the oculist when referred to would say practically the same, but might add that there was ¼ D. or ½ D. of hypermetropia, an amount that could be neglected. In fact, at the present day I have several patients, some who suffer pretty severely, who have on my advice consulted their oculist, and come back with the clinching reply, "I told you so, my eyesight is perfect."

It was not for some years after I had provisionally surmised that the eye was the cause of these illnesses that the late Mr. McHardy, by curing two of the worst (Nos. 9 and 74), absolutely convinced me of its truth.

Miss O., aged 26, seen in 1909, had for many years suffered from great depression, weakness, and general neurasthenic symptoms, and at times from frontal headache lasting for many days. She had undergone most of the usual treatments, including a rest-cure, without benefit. She was almost completely cured of all these symptoms by wearing glasses ordered by Mr. McHardy, though otherwise she is a delicate woman, having suffered, amongst other things, from mastoid suppuration (supposed to be tubercular) and sciatica. As illustrating a point which I shall refer to again later, I may mention that she has consulted four oculists since Mr. McHardy's death, one of whom told her that her eyes were normal and that she required no glasses; two ordered her glasses which did not relieve her, and the fourth only succeeded after several very long examinations.

[1] A paper read before the Medical Society of London on Feb. 4th.

Miss A., an artist, had since childhood endured very much the same symptoms, but with her the headache was of much more pronounced character, so that for weeks together she would be in acute agony, almost unable to speak on account of the pain. She comes of a nervous stock, but her life has been made endurable by the use of glasses. In her case she was herself convinced that her eyes were the cause of her pain, and had already consulted two of the leading oculists in London before seeking help from Mr. McHardy; but neither her medical adviser nor these oculists had considered that the eyes could be the cause of her illness. She has told me that all her young life was a misery to her on account of either having to suffer agonies from the ordinary pleasures of young people or from depression if she refrained from them.

Syndrome: Incidence and General Condition.

The following is the syndrome produced by eyestrain (including migraine): fears and panics; depression of spirits and vitality; fits or attacks (including fainting); paralysis (functional); giddiness, dizziness, and vertigo; fatigue; indigestion; disorders of sleep; train vomiting; and a few other occasional signs, which will be mentioned with the cases. I have purposely avoided reference to ordinary cases produced by reading, needlework, &c., as headache from these causes is always readily recognised.

This paper is based on the analysis of 100 cases, and I should here like to say that these are not all the cases of which I am aware, nor are they selected or consecutive cases. They are those I have remembered to index. All my notes are kept on cards, and I have no "Disease" index, and have only from time to time indexed a case as I thought of it. Included in the 100 cases are 35 males and 65 females, showing a preponderance amongst females of nearly 2 to 1. There is no doubt that the most complete cases of invalidism were amongst the women, whilst several of the men were absolutely incapacitated from work, and the most severe cases of migraine were amongst them. It seems to be a disease that man on the whole is more able to stand up against than woman, probably because he learns early in life more surely to control his nervous system than woman does. In woman also the symptoms tend to be intensely aggravated at or about the catamenia; and therefore she is pretty certain to have some kind of attack at least once a month which a man would escape. I may here mention that the catamenia do not seem in any way to be affected by the complaint.

The age-limit is very wide, and includes cases from childhood up to old age. But this statement to a great extent gives a fallacious view; the age as shown in the table is the age at which the trouble was recognised, and many, if not most, of the patients could trace back symptoms to early youth or childhood. I think it may be truly said that, if the surrounding conditions are favourable to their production, the symptoms will first show themselves in a minor degree in childhood, and that they will become quite manifest at about the age of 15 to 25. The greatest success in treatment is attained at this age, no doubt due to the more ready response of nerve tissue at the early age than later. Whatever the actual cause of pain, there can be little doubt that it is some physical alteration in nerve cells, and that as years go on the alteration tends to become permanent and incurable. It follows, then, that every effort should be made to recognise the condition in youth, and, as this is not difficult if sought for, we may hope that in the future the number of these neglected cases will be decreased.

The condition of the general health of these sufferers shows no alteration which would account for the symptoms; quite 25 per cent. are otherwise of good strong physique and appear normal in every respect. Many of them complain of indigestion, and consider, and have been advised, that their symptoms are the result of the indigestion, but inquiry elicits none of the classical symptoms of dyspepsia, nor on physical examination are any of the usual signs found. There is also complete absence of true symptoms or signs of disease or disturbance of the liver.

Some patients suffer from colitis, but in most of them the eyestrain symptoms preceded this disease, and though the colitis probably did exaggerate the symptoms, it could in no sense be described as their cause. Heart disease is conspicuous by its absence, one case only showing any organic lesion, and even palpitation is not frequently heard of.

Analysis of Symptoms.

I will now proceed to analyse the symptoms which I consider proper to the disease.

Headache or migraine.—This is the most common of all the manifestations; it is present in from 60 to 70 per cent. of the patients. In some it constitutes the chief if not the only sign; in others it is trifling or slight.

True migraine—that is, morning hemicrania followed later in the day by nausea or vomiting—is very common; or, if beginning during the day, preceded by hemianopsia or its other well-recognised eye signs. It is easy enough to say what is definite migraine, it is not so easy to say what is not migraine; many people have severe general headache followed by vomiting, which attacks are almost certainly of the nature of migraine. I feel certain that if any medical man has an accurate history of 100 cases of headache, he will find it difficult to draw a distinctive line between headache and true migraine. Many of these pains are called neuralgia—some are called rheumatic (this is the type which lasts days and sometimes weeks); in some the actual pain seems to be slight, but there are sensations of pressure from bands, clamps, &c., or of hammering or thumping on the head.

The commonest seat of the pain is the frontal region, sometimes beginning on one side and passing to the other, sometimes beginning on both sides. Frequently it is definitely in the eyes, "through the eyeballs," "at the back of the eyes," with a certain amount of tenderness of the eyeballs—sometimes acute. The pain, however, may be vertical, occipital, or temporal, but never parietal alone.

Depression of spirits is a very common symptom, being noted in nearly 30 per cent. amongst my 100 cases. It seems generally to be due either to the frequent attacks and the dread of their recurrence, or may be caused by the incapacity for taking an active part in life, or from having had to give up an occupation which was congenial or the only source of income. In some cases depression is the only marked symptom, and the patient lives a listless, useless life, in all probability due to the (forgotten) experience that active work produced pain. It is curious to find what a number of patients have given up doing certain things, because they "do not care for them," but who will recall, on being questioned, that their real reason was that such things were fatiguing or produced actual pain. They had found that the game was not worth the candle, and they had gradually dropped out from certain pleasures or duties—more commonly the pleasures than the duties. It is frequently the case that these patients will have assumed the mental rôle of "not caring" or "not taking interest" in certain things. They have always been considered physically strong, and appeared so, and in order not to be thought hysterical, nervous, or fussy they have tried to avoid doing the things which in their experience tired or made them feel ill.

I have in mind a young lady, aged 22, about whom I was consulted quite recently; she was of this type. She had given up many ordinary things in life and tended to live very much to herself; would not join in the ordinary pleasures of the rest of her family, although if alone with one person she was bright and intelligent. She could, however, hunt all day and come home none the worse for it. She made few complaints except of fatigue and "an aching back." Her mother feared that she was "becoming peculiar." On examination I found her a very strong, healthy young woman with legs and arms of iron, a back as strong and muscular as a circus horse, and her spine as supple as a willow. On questioning her I found that she had all the typical symptoms of eyestrain, and therefore she had avoided doing the things which produced them.

This condition may go on to depression or, what is occasionally met with, a recluse type of life, and it makes me wonder whether the historical recluses suffered from eyestrain. Two of my patients have told me that they only felt well in the deserts of Egypt.

Fatigue is another very frequent complaint, definitely mentioned by about 40 per cent. of those seen. It is produced apparently by the constant bodily discomfort which these people endure. It is not, of course, met with in those who only experience occasional attacks of migraine, but in those whose mental and physical condition has been lowered by almost continuous suffering or discomfort in one way or another. It is the half-way house to a typical case of neurasthenia, and eventually ends in it unless a life more suitable can be found for the patient. Many of those whom I have seen have been typical neurasthenics and have been treated as such; one, a literary man, had nearly two years in a rest home and in the country; all have relapsed or even never improved. It is not an uncommon thing to be told,

"I do not know what it is not to be tired," and "I am often tired in the morning when I awake; sometimes I feel better at night."

As with migraine, so with fatigue, it often begins in the morning, which is difficult to explain. It may be due to the same cause as muscular stiffness, which is felt the day after a hard day's exercise and not the same day; if one has a hard day one feels the stiffness the next morning on rising. Every patient, however, will tell you that the stiffness and fatigue from exercise are quite different from the mental and physical exhaustion which they feel in this condition from eyestrain.

Fears and panics are frequently mentioned by the patients. Fears take the ordinary forms of unreasoning dread of what is going to happen, of some approaching catastrophe or of a pending illness coming to themselves, not to their friends or relations. The panics not unseldom take the form of claustrophobia. The patients hate being inside omnibuses or trains, but as a rule they can ride outside an omnibus or in any open vehicle, and they seldom have panics in an ordinary house or building. Two of my patients have had to leave trains while on a journey, and many utterly refuse to enter an omnibus.

One young man, a mechanic (Case 96), came from Australia to work at munitions. His health had been good in Australia, but during the year in England he had broken down. His home was situated at one end of London and his place of work at the other. This entailed a journey by underground to a main station, then a change to the main line. He told me that he felt good for nothing on arrival; at work he often "felt faint" and had to go out in the open air, but soon recovered. He had been examined by two doctors attached to the works, who had reported him as "run down." This is a perfectly typical case from eyestrain. He felt so ill that he wished to return to Australia, but the medical report on him was such that he was told that if he did he must pay his own passage.

As mentioned above, *indigestion* was frequently complained of, and I found it a marked symptom in 30 per cent. of the cases. In most cases it was quite atypical: a want of appetite, distaste for food, and a fullness or a little flatulence, which the patients are constantly trying to eructate in order to relieve the uncomfortable sensations. The abdomen frequently feels normal, is often retracted and small, there being no flatulence and no distension of the stomach or bowels. In some cases, however, there is undoubtedly definite and severe indigestion with flatulent distension of stomach and bowels. Constipation is often marked, but I was surprised to find in how many cases it was absent, many of the men assuring me that they had free and copious evacuations of the bowels daily, that they had good appetites, and no discomfort. In practically all the cases of constipation this had always previously been assigned as the cause of the trouble, and had been treated and more or less overcome by the free use of laxatives and purgatives. Patients are generally insistent on the relief experienced from a purge, although they allow that it is in no sense a cure. This treatment has been tried to the *n*th degree and found wanting. The cause of this syndrome is undoubtedly not to be found below or behind the belt.

Disorders of sleep are very common. I have 12 cases in which insomnia was much complained of, but most patients mention some discomforts about sleep; it is often heavy, sometimes very restless. Whether the sleep is absent, intermitting, restless, or accompanied by dreams and nightmare, waking up unrefreshed is the ordinary result, and the worse cases always complain of this—they wake tired and begin the day badly. I do not, however, remember a patient consulting me for this cause alone. Dropping to sleep during the day is frequently mentioned.

Giddiness or vertigo is very frequent, and I found it present in between a quarter and one-third of the cases. It does not seem to vary in any particular which I have noticed from the ordinary vertigo produced by other causes, and one patient who suffers both from aural and ocular vertigo was hardly able to distinguish between them, except that in one case it was preceded by singing in the ears, in the other by headache.

Vertigo and giddiness are such common ailments and so little amenable to medicinal treatment that in every case, especially in children, a possible ocular origin ought to be thought of. In this connexion I could mention two boys (Cases 54 and 80) both of whom were removed from school on account of their frequent attacks of giddiness; in one of them it was accompanied by attacks of migraine type. They were both cured by glasses.

I have seen two women so severely attacked with ocular vertigo that one of them could not move from the recumbent position for a week, the other for three days or more (Case 95).

"*Attacks.*"—Many of the patients complain of "attacks," and from their descriptions it is not always easy to ascertain their true nature. I refer here to sudden and short attacks coming on when the patients are going about their ordinary avocations. Certain of these are undoubtedly true fainting or syncopal seizures, and there can be little doubt that the fainting so common in crowded hot rooms, concerts, &c., is of ocular origin. In these cases the disease has been diagnosed as "weak heart," "dilated heart," a most disastrous verdict, the memory of which remains in a nervous person's mind for many years. But there are seizures which are not fainting and which conform in every respect to *petit mal;* and for the sake of a better name I call them "brain-stop." I have come across several cases of this kind, and have seen one patient in them, and have had others described to me by friends.

One man whom I attended for some years for mitral stenosis, and who succumbed to it about 10 years ago, experienced about once a month 25-40 attacks in a day, each attack lasting 20-35 seconds. Quite suddenly, perhaps, when talking, he would stop, look about him, mumble, did not seem to understand anything, but could remain erect, and did not change colour. He had one attack when driving himself in a dog-cart on the Embankment. I attributed these attacks at the time to his heart condition, but they were as frequent when he was in good health as when ill, and I was then at a loss to explain them.

Another case (No. 100), a lady, whom I have only attended for the last six months, has had similar seizures once a week or fortnight. She had been treated by her own medical man and a specialist for epilepsy without any improvement. Since wearing glasses she has had only one attack, a week after she commenced wearing them.

Three of my patients were sufferers from true epilepsy.

One (Case 71) had for many years slight epileptic seizures in her sleep, and in 1900 and 1902 had continuous epileptic attacks, the first lasting 48 hours, the second 24 hours. She also suffered from frequent headache and indigestion and complained of typical eyestrain symptoms. Since wearing glasses, now for seven years, she has had no attack. Bromide treatment has also been used and continued.

Another (Case 10), a boy of 14½, had his first attack after a party; he felt dizzy and then became unconscious. He was brought to me, and finding that there were signs suggesting eyestrain and that otherwise he was strong and healthy, I suggested that he should be taken to an oculist. During the examination of his eyes he was suddenly seized with a typical epileptic seizure.

A third case was in a young man of 20 who was reading very hard at the university for an examination. Late one night while reading by a bad light he was seized, and six months later he had an attack after going to a theatre. In this case the patient was much worried at not being accepted for the Army on account of his eyesight and was miserable at the fear of being considered a shirker. He was given suitable glasses, put on bromide, and made to live in the country, where he remained well for nearly a year. After that he went to the East to a plantation; there his eyesight rapidly deteriorated, he had more fits, and completely broke down.

Although I have not sufficient evidence to assert that epilepsy is due to eyestrain, I have ample evidence that attacks of similar character to *petit mal* are due to it; and that attacks of complete unconsciousness may occur. My own experience of epilepsy is small, but I hope that some physician who sees much of it will again take up the question, unbiased by opinions already given, and endeavour to find out whether there is some close relationship between eyestrain and this terrible malady.

Three cases of complete unconsciousness may briefly be mentioned here.

One (Case 69), aged 58, a Member of Parliament, who had suffered from symptoms of eyestrain, and especially with pain in the right eye, became unconscious for a whole day in 1904 after holding a series of meetings during an election. He had to give up his Parliamentary career, but his health, except for infrequent attacks of migraine, is good if he lives in the country.

Another case, a Member of Parliament, of 60 years of age, also was unconscious for some hours during the strain of an election. Except for headaches he is a strong and healthy man.

No. of case and initials.	Age.	Date.	Sex.	Occupation, married or single.	1. Duration of symptoms. 2. Symptoms attributed to or following.	Headache.		Panics, fears.	General nervous symptoms.					1. Special symptoms. 2. Condition of eyes: M, Myopia; H, Hypermetropia; A, Astigmatism. 3. Physical condition.	1. Symptoms improved by. 2. Result.
						Migraine.	Pain.		Depression.	Fits, "attacks," paralysis.	Giddiness.	Indigestion.	Fatigue.		
1. J.G.	23	1911	M	Merchant.	1. 1909-11. 2. Singing; t.	—	+ Eyes.	—	+	—	—	—	—	1. Irritation of throat; inability to use voice without effort. 3. Pharyngitis.	1. Country.
2. D.L.	32	1911	M	,,	1. Since childhood. 2. T; crowds; t; stuffy rooms.	—	+F+O	+ x	+	—	—	+	—	1. Demoralised. 2. H + A. 3. Sound.	1. Athletics.
3. M.R.	40	1910	F	Matron.	1. Since childhood. 2. Pictures; T; meetings; s-s; constipation.	+	—	+	+	—	+	—	—	1. Sensation of blood running down face; tw. of cheeks; freq. sore-throats. 2. ? 3. Sound.	1. Country.
4. J.M.	62	1910	F	—	1. Since childhood. 2. Fatigue.	+	—	—	—	—	—	+	+	1. Freq. sore throats. 2. ? 3. Poor ph.	—
5. R.W.	28	1900	M	Civil Service.	1. Many years. 2. Parties; T; t; C; crowds.	—	—	+ (a)	+	—	+	—	—	1. Twitchings; inability to concentrate. 2. ? 3. Good.	1. Exercise.
6. D.	44	1907	F	M.	1. Since childhood. 2. Meetings; cat.	+	+ (b)	—	—	—	—	—	+	1. Daily headache on waking. 2. H + A. 3. Severe colitis and arterio-sclerosis.	2. Not improved.
7. S.	41	1907	F	Widow.	1. Since childhood. 2. Picture-theatres; race meetings; crowds; motoring; not trains.	+	+ (c)	—	—	—	—	+ (d)	+ x	1. Paroxysmal coryza. 2. H + A. 3. Hysteria with anæsthesia.	1. Resting. 2. Not improved.
8. B.R.	11½	1908	M	Schoolboy.	1. For some years. 2. Excitement; T.	+	+ F	—	+	—	—	—	+	1. Great reader. 2. M + A. 3. Thin, tall.	2. Practically cured.
9. O.	26	1909	F	S.	1. Years. 2. Reading; T; P; t.	—	+ F	—	+	—	—	—	—	1. Constipation; sciatica. 2. H + A. 3. Delicate; old mastoid.	1. Country. 2. Practically cured.
10. H.J.	14½	1913	M	Schoolboy.	1. 1 year. 2. One attack day following party; "felt dizzy"; then unconscious. Second attack during examination of eyes.	—	—	—	—	+	—	—	—	2. M + A, compound.	2. Bromide treatment. Recurrent attack after tea party in 1915.
11. L.	51	1910	F	M.	1. All life with intermission. 2. t; C; P; S; crowds.	—	—	+	—	—	+ (e)	—	—	2. H + A.	2. Greatly improved 1 year.
12. P.	60	1911	F	Widow.	1. 6 months. 2. Dislikes crowds; streets.	—	—	+	+	+	+	+	—	2. M + A. 3. 2 attacks of colitis; cardiac M. Pressure 150. P. unaltered during attack.	2. V. doubtful case; improved enormously for 3 years in country until return home.
13. M.	45?	1910	F	S.	1. 1 year.	—	+ (f)	+	—	—	+ x N	—	—	2 ?. 3. Irritable heart; colitis x.	1. Resting eyes. 2. Glasses cured eye condition; but occasional colitis attacks.
14. L.	29	1911	F	M.	1. Years. 2. Crowds; C; s-s; S.; bad night.	—	+	+ (g)	+ (h)	+	+ (i)	+	—	1. Neurotic; nervous movements of arms. 2. H + A. 3. Pallid, not anæmic.	2. One nerve specialist thought epilepsy; another no.
15. A. J.	62	1911	M	Engineer.	1. Many years. 2. P; s-s; parties.	—	—	—	—	—	—	—	+	2. R. = M; L. = H + A. 3. Delicate; dyspeptic.	—
16. M.	29	1911	F	Maid.	1. All life. 2. t. T.; s-s; sea journey; not crowd.	+	—	—	—	—	—	—	—	1. Cat. irreg. 2. ?	Notes lost.
17. H.V.	58	1916	M	Author (formerly army).	1. Boyhood. 2. Not known; not from reading or writing, cold weather, fogs	—	+ (j)	—	+	—	—	—	+	1. Broke down cramming; neurasthenic. 2. H + A. 3. Very thin.	2. Pain head cured; back better.
18. B.L.	43	1910	F	Widow.	1. Years. 2. P; T.	—	—	—	—	—	—	—	+	2. H + A.	—
19. C.	42	1902	F	Children's nurse.	1. 1 year.	—	—	—	+	—	+ (k)	—	+	1. Very nervous and apprehensive; "weakness of legs" preventing walk. 2. H.	2. Cured.
20. S.	53	1911	F	S.	1. Years. 2. t; T; P; s-s.	—	—	—	—	—	—	—	+	2. ? 3. Rheumatism.	—
21. W.	34	1911	F	M. (formerly nurse).	1. Childhood. 2. T; P; s-s; crowds; walking streets; parties; t.	+	+ F	—	+	—	—	+	—	1. Very nervous and apprehensive. 2. H + A. 3. Uterine troubles; dyspepsia; mov. kidney.	2. Vomited as a child after parties; greatly improved.
22. W.	46	1911	F	M. (teacher).	1. Years. 2. After work.	+	+ (x)	—	—	—	+	+	—	2. M.	2. Great relief.
23. P.F.	54?	1912	M	Medical man.	1. Since 16 squint, fol. accident. 2. t.	+	—	—	—	—	—	—	—	2. Mixed astigmatism.	1. Idle life in country.
24. H.	50	1900	F	M.	1. Years, since childhood.	+	+	—	+	—	+ x. V	—	—	1. Int. pulse. 2. H + A. 3. Developed G.K.	2. Great relief.
25. W.F.	23	1912	M	City.	1. Since city life, 1½ years. 2. T; crowds; processions.	—	+	—	—	—	—	—	+	2. H + A.	1. Quiet; country.
26. G.	52	1910	F	S.	1. 1 month since arrival in London.	—	—	—	+	—	—	—	+	2. H + A.	2. Doubtful case.
27. A.M.	7	1911	M	—	1. 3-4 months.	—	—	—	—	—	—	—	—	1. Tw. of eyelids and face. 2. H + A. 3. Good.	—
28. H.L.	41	1899	M	Engineer.	1. Many years. 2. T; t; overwork (reading or writing); town life.	+ (l)	+ x	—	—	—	—	+ (m)	—	2. M + A.	1. Country.
29. G.	39	1908	M	—	1. Sl. boyhood. 2. Fatigue; worry; golf.	+	—	—	—	+	—	—	—	1. Chronic tuberculosis of lungs. 2. ?	—
30. W.	36	1900	F	Widow.	1. Many years. 2. Bicycling "causes biliousness." Traffic.	+	+ x	+	+ x	—	+	+	—	1. Dyspepsia; flatus. 2. H + A.	2. Greatly improved.
31. H.	27	1912	F	S.	1. Some years. 2. T; parties; walking in streets; t.	—	+	—	—	—	—	+ (n)	—	2. H + A.	1. Country.
32. G.T.	45	1912	M	Formerly stockbroker.	1. Ill since boy; years. 2. All mental exercise, though v. fond of it; crowds; t. (if carriage full).	—	+ V	+ x	—	+	—	—	—	1. Has had to leave train; inability to do anything. 2. H + A. 3. Good, but neurasthenic.	—
33. B.	36	1912	F	S.	2. t; T; s-s; P; horse riding; lies down in train.	—	—	—	—	—	—	—	+ x	1. Constipation slight. 2. H + A. 3. Flabby.	1. Country. 2. Greatly improved.
34. F.	60	1910	F	Widow.	1. Years. 2. t; T; not reading.	+	+	—	+ x	+	+	—	—	2. H + A. 3. Bradycardia; bronchitis.	2. Epileptic family.
35. H.	50	1911	F	M.	1. Since 8. 2. Crowds; s-s; t; T; P.	+ x	+ x	—	+	—	—	+	+	1. Constipation; has led invalid life for many years. 2. M + A.	1. Dark room. 2. Morphia, 25 years; enormously improved.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
36. C.	22	1912	F	S.	2. s-s; T; t; P; crowds—not dancing.	—	+	—	—	—	—	—	—	1. Train vomiting. 2. ?. 3. Good.	—
37. M.	36	1910	F	S.	1. Years. 2. t (stuffy); T; parties; church; not balls; P; not s-s; London does not tire.	—	+	—	—	—	—	+	—	2. ?. 3. Constipation.	1. Free life on station, Australia.
38. B.	62	1912	F	Widow.	1. Many years. 2. T; t; P; s-s; hot sun; E. wind.	+	—	—	—	—	—	+	—	2. H + A. 3. Rheumatism.	2. Cured.
39. V.B.	35	1908	M	Clerk.	1. Years. 2. Stuffy rooms; theatres; P	—	+	—	—	—	+ x	—	—	2. H. 3. Good; colitis.	2. Cured.
40. F.	42	1912	F	M.	1. 2 years. 2. T.	—	+	—	—	—	—	—	—	1. Vomiting after journey across Siberia. 2. ?.	—
41. M.M.	47	1912	M	Financier.	1. Years. 2. T; t; reading; motoring; not crowds.	—	+	—	+	—	—	+	+	1. Nervous indigestion; eructation. 2. ?.	
42. H.M.	40	1914	F	M.	1. A few years. 2. Reading; shops.	+	+	+	—	—	+ x	—	—	1. Neurotic; insanity in family; probably alcoholic; tw. lids. 3. Aural vertigo.	2. Improved.
43. F.	52	1912	F	M.	1. All life. 2. Hot rooms; town life; not T, P, or t.	+	—	+	—	—	—	+	—	1. Indigestion; constipation; twitching lids. 2. M + A.	2. Cured.
44. N.	47	1906	F	M.	2. Hot rooms; t; crowds.	+	—	—	—	—	—	—	+	2. H + A.	—
45. R.	30	1893	F	M.	1. All life. 2. Reading; streets; S.	—	+ x (o)	+	+	+ (p)	—	—	+	1. Nausea. 2. H + A. 3. Strong; appendix.	1. Dark room. 2. Nearly cured.
46. R.	19	1913	F	S.	1. A few years. 2. t; P; concerts; streets.	—	? slight.	—	—	—	—	—	+ (q)	1. Slight cat. disturbances. 2. H + A; 3. Good.	1. Bicycling.
47. R.	34	1908	F	M.	2. Crowds; streets; parties (talking); noise.	—	+ x	+	—	—	—	+ (r)	+ x	1. Had rest cure; neurasthenia. 2. H + A; exopho ia. 3. Colitis.	2. Much improved.
48. B.	25	1913	F	M.	1. Many years. 2. London shopping; P; not T.	—	+	+ x	+	—	—	+	+	1. Train Vg. as child. 2. Myopic. 3. Old appendix; neurasthenic.	1. Hunting; country life.
49. L. A.	20	1913	M	Teacher, student.	1. 2 years. 2. t; reading.	—	—	—	—	—	—	—	—	1. "Shaking all over," with pain in left hypochondrium. 2. ?.	1. Wearing glasses, being out-of-doors.
50. O.	23	1913	F	Musician.	2. t; buses; taxi.	+	—	+ (s)	—	—	—	—	+	1. Train N. 2. ? 3. Good; hysterical.	—
51. E.	27	1912	F	M.	2. Town; stuffy rooms; t; T; parties; concerts; dances; not reading.	—	—	—	—	—	—	—	+ x	1. Headache later; "bilious." 2. H + A.	—
52. G. M.	39	1913	M	Hairdresser.	1. 4–5 years. 2. Work in Ldn.; motoring; excessive smoking.	+	—	+	—	—	—	+	—	2. R = M + A.	1. Country life. 2. Temporary improvement.
53. S. D.	31	1913	M	S.	2. After theatre.	+	—	—	—	+	—	—	—	2. ? 3. Good.	—
54. M.J.	9½	1913	M	School.	—	—	—	—	—	—	+ x	—	—	1. Hot feelings in attacks. 2. H + A. 3. Adenoids.	2. Cured.
55. S.	31	1913	F	M.	1. Years. 2. Shopping. T; P; s-s; indoors; bad air; crowds.	—	—	—	—	—	—	+	+ x	2. ? 3. Good.	1. Country life.
55(a)M.B	21	1914	M	Student.	1. 1 Year. 2. After reading.	—	—	—	—	+	—	—	—	1. Neurotic; excitable. 3. Good.	2. Broken down; lost sight.
56. S.	22	1913	F	Russian (S).	1. 11 months. 2. T; C; crowds (not S); smells; s-s; closed motor; pr.	—	+ (t)	—	—	—	—	+	+	1. Train Vg. 2. ?	—
57. D.	35	1905	F	M.	—	—	+ (u)	—	—	Faint.	—	—	+	1. Tw. lids. 2. H + A. 3. Intermittent heart.	—
58. C.S.	31	1913	M	—	1. Since boyhood. 2. t; motoring; dances; parties; not crowds but pr.	—	—	—	+ (v)	—	—	+	—	1. Neurasthenic; life of recluse. 2. H + M + A. 3. Good.	1. Hunting.
59. C.	38	1913	f	M.	1. All life. 2. t; crowds; s-s; cricket matches; reads in train.	—	+	—	—	—	—	+ (w)	+	2. Myopic.	—
59(a) C.J	58	1913	M	S.	1. "Lately."	—	+	+	—	—	+	+	—	1. Introspective; "legs give way." 2. H + A. 3. Good; distension of colon.	1. Golf.
60. F.E.	50	1911	M	M.	1. All life. 2. Since watching races at 17; parties; balls.	+ +	—	—	—	—	+ x	+	—	2. H + A. 3. Good; infantile paralysis arm.	2. Cured.
61. M.B.	25	1913	F	S.	1. Years. 2. T; t; motoring (after 15 miles); can read 1 hr.	—	—	—	—	—	—	—	+	2. H + A. 3. Delicate; chronic colitis	—
62. S.C.	52	1913	M	Engineer ?	1. 10 years. 2. T; t; traffic.	—	—	—	—	—	+	+	—	—	1. Walking.
63. S.	44	1912	F	Hotel proprietor (S).	1. 3 years. 2. Writing; P; T; traffic; not in crowds.	—	—	+	—	—	—	—	+ x	1. Much anxiety. 2. ? 3. Good.	1. Country (at once). 2. Greatly improved.
64. W.	31	1913	F	S.	2. t; T; hot rooms; crowds.	—	—	—	—	—	—	—	+	1. Lives invalid life; only walks mile. 2. H + A. 3. Slightly anæmic; reported crooked spine from injury; Pulse 132.	—
65. S.L.	12	1912	F	School.	1. 7 years. 2. C; reading; worse since school.	?	+ eyes	—	—	—	—	—	—	1. Headache only stopped by vomiting. 2. ? 3. Good.	2. Cured.
66. M.D.	34	1910	M	Business.	1. Years. 2. t.	—	+ F.	+ in train	+	—	—	—	—	1. Has had to leave train on account of panic. 2. H + A.	2. ,,
67. W.	32	1914	F	"Works for living"; fmly. well off (S).	1. Since school (taken away). 2. t; P; parties; shops; crowds; inside buses; s-s.	—	+ (y)	—	—	—	—	—	+	1. Rides outside bus and looks over tops of houses. Dead tired by evening. 2. H + A.	1. Country; "a good dinne and theatre." 2. Typical case.
68. W.B	12	—	M	School.	2. Removed from school on account of giddiness.	—	—	—	—	—	+ x	+	+	1. Specially giddy; mng. on rising. 2. H + A.	2. Cured.
69. B.G.	58	1914	M	Barrister, ex-M.P.	1. Since school. 2. Broke down at work; t; dinner parties; functions; reading; dancing; T.	—	+ R. eye	—	—	+ (z)	—	—	+	1. "Insensible one day during election" 14 years ago. 2. H + A.	1. Long walks. 2. Cured.
70. B.K.	40	1913	M	Business.	1. School. 2. Hard work; hot rooms; concerts; t; hard reading; T.	+	+	—	—	—	—	+	+	2. H + A.	1. Country. 2. Cured.
71. B.R.	37	1910	F	S.	2. P; t; parties; avoids T.	—	+ (aa)	+	+	+ (bb)	—	+	+	1. Severe constipation. 2. H. 3. Epileptic; 1899 and 1900, 24 hour attacks.	1. Country quiet. 2. Insanity in family; slightly improved.
72. G.	29	1914	F	S.	1. 1 year. 2. Crowds; traffic; parties; C; T; tennis.	—	+ F	—	—	—	—	—	—	2. H + A. 3. Anæmia.	2. Cured.

No. of case and initials.	Age.	Date.	Sex.	Occupation, married or single.	1. Duration of symptoms. 2. Symptoms attributed to or following.	Headache.		Panics, fears.	General nervous symptoms.					1. Special symptoms. 2. Condition of eyes: M, Myopia; H, Hypermetropia; A, Astigmatism. 3. Physical condition.	1. Symptoms improved by. 2. Result.
						Migraine.	Pain.		Depression.	Fits, "attacks," paralysis.	Giddiness.	Indigestion.	Fatigue.		
73. C.	62	1914	F	Authoress (S).	1. All life. 2. t; P; s-s; C; shopping; avoids processions.	+	—	—	—	+	—	+	—	1. 2 attacks of hemiplegia, Aug. 1st, Sept. 2nd, 1913. Leads invalid life. 2. H + A. 3. Old Graves'; intermitting heart.	2. Greatly improved.
74. A.	40	1905	F	Artist (S).	1. All life. 2. t; P; s-s.	+	+F	—	—	—	+	—	+	2. H + A.	2. Almost cured.
75. M.	43	1902	M	Business.	1. Since 10–12. 2. First attack "produced by glint on water."	+	—	—	—	+	—	—	—	1. Pain and stiffness tongue and L. arm; "often middle-headed." 2. ?	2. Died? insane.
76. D.	48	1912	F	Lodging house keeping (S).	2. Walking in street.	—	+	+	—	—	+	—	+	2. H + A.	—
77. A.	35	1914	F	M.	1. Years; "always." 2. Shopping; P; T; parties; crowds.	—	—	—	—	—	—	+	+	2. M + A. 3. Good.	1. Country. 2. Cured.
78. L.A.	26	1914	M	Author.	1. Boyhood. 2. t (at night); P; not T.	—	+ (*cc*)	—	—	—	—	—	+	1. Sleepiness. 2. H + A. 3. Good.	1. Switzerland. 2. Better.
79. W.S.	41	1914	M	Organist.	1. 10–15 years. 2. Reading; not T; t.	+	—	+	+	—	—	—	+	1. Irritable; "times of abstraction" and unreality. 2. H + A. 3. Good; nervous; pyorrhœa	2. Better.
80. L.W.	9½	1915	M	School.	1. Since aged 2. 2. T; motoring; parties; C.	—	+ & Vg.	—	—	—	+	+	—	2. H + A.	1. Country; exercise. 2. Cured.
81. W.	38	1915	F	M.	1. A few years. 2. t; crowds; shopping; C.	—	+ (*dd*)	—	+	—	—	—	—	1. Headache, Vg at cat.; "nervous shakes" all over; "choking." 2. M + A. 3. Good, but nervous.	2. Cured.
82. I.C.	28	1915	F	Governess (S).	1. Years. 2. Crowds; T; hard reading; needlework; s-s; shopping.	+	—	—	—	—	—	—	—	2. ? 3. Good.	1. Travelling; Switzerland.
83. S.	29	1915	F	M.	2. Motoring.	—	+ & Vg.	—	+	—	—	—	+	1. Nasal catarrh. 2. H + A. 3. Good; nervous.	1. Quiet in country. 2. Improved; home worries.
84. H.	21	1911	F	S.	2. Cinema; P; t; dancing; bright light; horse-racing; C M.	—	+ (*ee*)	—	—	—	—	—	+x	2. H + A. 3. Good.	1. Can hunt all day. 2. Cured.
85. B. E.	23	1909 –15	M	Soldier.	1. since early life, worse after wound of head. 2. T; P; not t.	+	+	—	—	—	—	—	—	1. Pins and needles tongue and hand. 2. H + A. 3. Good.	2. Greatly improved.
86. H. S.	50	1915	M	Manufacturer.	1. A few years. 2. Business all day and in evening.	—	—	—	+	+	—	—	—	1. Worrying at night; attacks of "brain-stop." 2. H + A. 3. Good, nervous; Tc.	2. Quiet in country.
87. M. E.	43	1915	M	Soldier.	1. Years. 2. Crowded rooms; churches; motor-riding; fainted after W. C.M.	—	—	—	—	+	Dizzy. x	—	—	1. Attacks of "brain stop." 2. R. = M+A; L. = H + A. 3. Contracted S.	1. Mauheim 6 mths. 2. Nearly invalided for Ht. Cured.
88. M.	63	1916	F	Widow.	1. Since London, 6 ms.	—	+	—	+	—	—	—	+	—	1. Quite well home in S.A. farm.
89. S.L.	24	1916	M	Dentist.	1. Years. 2. T; t; in or out bus; crowds; shopping.	+	+	—	—	—	—	—	—	2. Glasses. 3. Morbus cordis. Hæmaturia.	1. Country.
90. I.	28	1916	F	M.	2. P, T; not travelling or motoring; s-s.	—	+	—	—	—	—	+	+	1. Constipation x. 2. M + A. 3. Delicate; nervous.	1. Country.
91. S.	53	1904	F	M.	1. Years. 2. t; T; music hall; anxiety; packing; not church.	—	+ (*ff*)	—	+	—	—	—	—	1. Loss of memory: could not remember in October where spent summer. 2. H + A. 3. Good.	2. Cured till 1916; recurrent; glasses unchanged.
92. D.M.	65	1916	F	Widow.	1. Since childhood. 2. Crowds; shopping; working in garden; not t; T.	+ (*gg*)	—	—	—	+x (*hh*)	+	+	+	1. Was once carried unconscious to hospital. 2. H + A. 3. Good.†	1. Walking in parks. 2. Cured.
93. H.	36	1916	M	Retired Army officer.	1. 1903, following malaria. 2. t; packing; shopping: station; races; T; reading; fatigue; worry.	+	+ (*ii*)	—	—	—	+	+	—	1. Want of concentration; very irritable. 2. H + A. 3. Good; nervous.	1. Country. 2. Nearly cured.
94. E.	46	1917	F	S.	2. Long day watching aeroplanes.	—	—	—	—	—	+ (*jj*)	+	—	2. H + A.	—
95. D.	28 ?	917	F	M.	2. London.	—	—	—	—	—	Severe	—	+	2. H + A.	—
96. F. A.	50	1917	M	Mechanic.	1. 1 year. 2. Crowds; t; bus; stations; "his work"; not reading.	—	—	—	—	—	—	+ and faint.	—	1. Short of breath; often away from work one week. 2. ? 3. Good.	1. Quite well in Australia.
97. R.	44	1917	F	M.	1. Si 18. 2. t; day in L; s-s; not T; cat.	+	—	—	—	—	—	—	—	2. H + A.	1. Country; exercise; cycling.
98. O.	38	1917	F	M.	1. 6 months. 2. t; s-s; T.	—	—	—	—	—	+	—	—	1. Has had nervous breakdown. 2. ? 3. Old mastoid; curetting.	—
99. S.H.	39	1913	M	Author.	1. Years. 2 Crowds; t.	+	—	+	—	—	—	+	+	1. Much abdom. discomfort; rest cure for 2 years; relapse at once. 2. A. 3. Good.	2. Cured.
100. C.M.	57	1917	F	Widow.	1. Years. 2. Towns; crowds; reading; shopping; t; cinema.	—	+	—	—	+	—	—	+	3 Enlarged colon.	1. Lying in dark; country life.
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*

† Can bicycle 50 miles and go up hill. ‡ For fear of train and "feeling so bad."

T, Theatres. t, Travelling. C, Cinematograph. s-s, Sight-seeing. P, Picture gallery. S, Shopping. CM, Cricket matches. Si, Since. L, London. pr, processions. fol, Following. W, watching. Tc, Tachycardia. Vg, vomiting. x, very severe. N, nausea. Tw Twitching. Ph, Physique. int, Intermitting. cat, Catamenia. F, Frontal. O, Occipital. V, Vertical.

Cols. 7 to 14.—(*a*) Processions. (*b*) Back of neck; one temple; then other. (*c*) R. parietal. (*d*) And constipation. (*e*) On movement from prone. (*f*) Eyes, F O. (*g*) Morbid. (*h*) Since childhood. (*i*) Faintness indoors; occasional unconsciousness; rails. (*j*) Eyes, F V O and back. (*k*) Sudden attack in street. (*l*) Sleepy day before. (*m*) Constant. (*n*) Breathlessness; thumping of heart. (*o*) O and V, eyes. (*p*) Shivering. (*q*) In evening. (*r*) Since rest cure. (*s*) In trains, &c. (*t*) Eyebrow. (*u*) Morning, R. head. (*v*) About his health. (*w*) Constipation x. (*x*) R x, L eyes; vomiting. (*y*) F; "neuralgia." (*z*) "Insensible." (*aa*) General. (*bb*) Epileptic. (*cc*) F and eyes. (*dd*) And Vg.; V O, eyes. (*ee*) Slight F and back. (*ff*) O F V, Morning. (*gg*) Probable in early life. (*hh*) Unconscious. (*ii*) Eyes, and O. (*jj*) Vertigo.

Another (Case 92) was a lady who was carried unconscious to a hospital. The last thing she remembered was that she was standing on the pavement in a crowded thoroughfare waiting for the omnibus.

A few more symptoms may now be mentioned shortly. Patients often say that they have days when they feel that their brains will not work, days in which they are unable to concentrate their minds on anything; they have a feeling of unreality, sometimes almost of dual personality. These days may be infrequent, or if the disease becomes more severe they may be frequent, and may eventually totally incapacitate the patient for work.

Patients complain of twitching of the muscles, sometimes of the face, or it may be the arms or legs, or the body generally. Often they complain of irritability of the temper, and it is not infrequent for a wife to say that her husband is impossible to live with; or if the wife is the patient for the husband to make a similar remark.

On the whole, it may be said that many of these patients are of the neurotic irritable type, but no general rule can be laid down, as much depends on the inherited constitution of the nervous system, and much on the kind of life that the patient has to live.

Train vomiting is another occasional symptom. I find it prominently mentioned by five of the patients—a sufficient number to at least suggest the probability of cause and effect. Another patient who consulted me for train vomiting is not amongst the 100 cases, but she had all the other symptoms of eyestrain.

Paralysis of temporary nature is sometimes met with, mostly in those in whom migraine is prominent.

W. M., aged 47, had suffered from migraine since 10. In October, 1907, he had an attack of migraine with pains and numbness of the left shoulder and elbow; the mouth was drawn to the right. In March, 1908, another attack was followed by weakness of the left arm and hand, with sensation of pins and needles. The same evening he lost sensation and power in the arm. This lasted about four days, and when he first moved out of bed the left leg dragged slightly. On March 12 another attack of migraine was followed by thickness of speech and numbness of both hands.

Miss C., aged 62, had (this is what her doctor wrote to me), in October, 1913, an attack of hemiplegia of the left arm and leg, not thought to be embolus or hæmorrhage, and another slight attack in September. She had all the symptoms of eyestrain, and in addition severe stomach and bowel indigestion, piles, and a very intermitting heart, and had lived an almost invalid life.

Any one of these symptoms may give the cue to a diagnosis in a difficult nerve case—a cue which, if followed up by a little cross-examination, will often reveal an heroic struggle against life-long suffering. A look of intense surprise often comes over the face of these patients as one helps them to dig out of the buried past recollections of dropped pleasures and missed opportunities.

Cause of Symptoms.

But it may readily be said that all these symptoms are common; that all of them do not occur in the same patient. Why, then, are they grouped as being one malady? The answer will now be given. If you ask these people to what they attribute their attacks, their reply will always be the same—if they remember. But this point must always be thought of when questioning a patient: that as the malady generally began in youth or childhood, the patient may not immediately recall the causes to which at the time—often years previously—he attributed the symptoms. Now all these patients immediately attribute or recognise that the symptoms are produced by (or are worse after) railway travelling, sight-seeing, theatres, crowds, railway stations, big shops, shopping, race meetings, ordinary meetings indoors, motoring, sometimes games of ball, and, less frequently, by hard and prolonged reading. They nearly all prefer to walk in side streets to main streets, and, if possible, in the parks instead of the streets. They complain of "smoky rooms," "hot rooms," "stuffiness," and attribute the results to the heat and stuffiness and not to the real cause. For instance, it is quite common for women to say they feel ill after going to a tea party on account of the stuffiness, but they may live their whole life in a stuffy, hot, ill-ventilated little house and remain free from attack. It is a disease of town-dwellers and brain-users. It is not necessarily by the use of the brain in scientific research; it is, in fact, as frequent, if not more frequent, in the quick, intelligent society gossip, who goes everywhere and wants to be up in everything and know everyone, as in the *savant* who spends hours with his books. It is the lively, vivacious, quick-seeing eye that suffers.

The result is that, as time goes on, suffering is produced so much by these things that the patients tend to avoid them, and if they suffer much the tendency is to drift into the life of a recluse. Two of my patients, as I mentioned previously, said they were only "really well" when living in the desert of Africa.

These people are always improved by a life in the country, by outdoor exercise, by long walks or rides. They can hunt all day, can bicycle for miles. As one woman said to me, "I can hunt from 10 to 6, but if I go out to dinner, and especially if I go to a ball at night, I am ill for days after."

It must not be inferred that all the patients suffer after every one of these causes, but it is almost invariable that they suffer after some of them. Many will say, on being questioned about such things as picture galleries and theatres, that they never go there, and, if asked why, say that they do not care for them, or they have given them up on account of the fatigue caused by them. The number who have given up the simple pleasures of life is astonishing. They are too proud to say that they are tired or feel ill after such things, and they therefore say that they take no interest in them, and after a time they themselves believe their own story.

For instance, on a certain day some years ago, when one of the great ceremonial processions took place in London, I saw two patients sufficiently recovered to be able to go out. I asked them if they had seen the procession, and both of them told me that such things did not interest them. One, a middle-aged lady, was staying in an hotel, and had only to pass from one side of the hotel to the other to obtain a fairly good view. The other was a young man of 25, highly neurotic and very intelligent. Both had defects of vision, but both of them were too vain to wear glasses.

Condition of the eyes.—The ordinary practitioner can sometimes recognise that there is something amiss with the eyes. The orbits are in a few cases not horizontal; they are set at an angle to one another, and in one case I found that one orbit was nearly a quarter of an inch on a lower level than the other. But what is a more constant sign is twitching of the lower lid, very marked in some cases and occasionally complained of by young patients as "life blood." Sometimes the eyelids are squeezed towards each other, but the twitching of the lower lid is very pathognomonic. Older patients are seldom aware of the twitching lid or squeezed lid; the sensations originally produced have passed away.

Treatment.

For treatment the patient must be referred to an oculist. It will be seen, after reference to my table, that of the cases reported on by an oculist—77 in number—54 are hypermetropic and 14 are myopic, showing a percentage of 70 for hypermetropia and 18 for myopia. Both conditions are almost always combined with astigmatism. Nine cases have mixed or varied conditions, but for treatment the patient must be referred to an oculist.

The point of importance to practitioners is this, that it is the slight degrees of error of accommodation which do the harm, not the extreme degrees. With the latter the patient soon finds out that he cannot see without the assistance of glasses; with the former he *can* see perfectly well, but it is a strain to see, a strain not felt or recognised, but which produces results after a time. It is the drop of water wearing away the stone. The human eye was made for man in the roving and agricultural life; it is not yet adapted for the restless unceasing movement at close quarters in a town. Life in town entails constant and rapid changes of accommodation; the limit of vision is the width of the street, and few ever study a distant scene or look at the sky. The life on a Transvaal farm, where objects at distances of 20 miles are easily seen, is the natural life, and symptoms such as I describe must rarely exist. But in pent up London they do exist, and will exist until evolution produces an eye suitable to the pace of modern town life.

One question of deep import arises. Is there any condition of the eyes the presence of which would warrant an oculist in warning any young patients or their parents of probable danger? I have asked Dr. Kenneth Scott, for whose assistance in the treatment of many of these patients

I am deeply indebted, to come here this evening and give us the benefit of his experience.

Conclusions.

1. Eyestrain is very common amongst brain workers and town dwellers.
2. It is produced especially by the minor degrees of errors of refraction.
3. It is uncommon with the higher degrees because the less a man can see the less he strains.
4. It is the quick, intelligent, educated eye that suffers.
5. Eyestrain leads by slow degrees to definite nervous symptoms and breakdown—a condition which I call blepsopathia.
6. The disease shows its first signs in childhood or youth.
7. It is easily cured in youth, with more difficulty in older age.
8. It is useless to pay attention to the patient's report on his own eyesight.

I feel that I owe an apology to other workers in this field for not having referred to their work or even mentioned their names. But having, unaided, groped my way to this line of thought I considered, not conceitedly but in all humility, that as evidence was ample, voluminous, and continually forthcoming, it would be wisest for me to continue my study unbiased, unweighted by anything but first-hand personal observation.

AN APPARATUS FOR TRANSFUSION OF BLOOD BY THE CITRATE METHOD.

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IN view of the increasing application of blood transfusion in the treatment of anæmias and of the special occasions provided for it by war injuries no apology is needed for the description of a simple method, and that which follows requires no greater skill than is involved in ordinary intravenous medication. Over two years ago I discarded attempts to use two-way taps and paraffin-lined apparatus in favour of the employment of sodium citrate as an anticoagulant, as suggested by Weil.[1] I have no personal experience of any of the methods involving anastomosis of vessels, either directly or indirectly, by means of a cannula; all require such surgical skill as is only to be acquired by considerable practice; all involve a considerable incision in the arm of the donor; and in none of them can the amount of blood passed from donor to patient be exactly measured.

The Citrate Method.

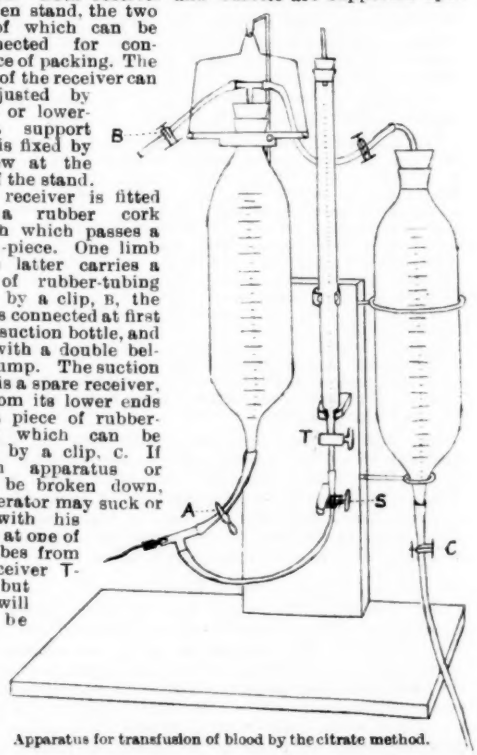
The citrate method is simple, and I believe that it involves no special dangers. Large quantities of sodium citrate (0·4 g. per kg. and upwards in dogs)[2] rapidly introduced into a vein may prove immediately fatal in animals, probably by depriving the heart of the calcium which is necessary to sustain its contractions, but the quantities employed in practice are, so far as I can determine, without danger. Nor, according to Beck,[3] do they diminish the coagulability of the patient's blood. I have never seen spontaneous hæmorrhage occur after a citrate transfusion, even in the case of a hæmophilic boy who was transfused on account of anæmia and recent successive spontaneous hæmorrhages into the hand, knee-joint, and calf muscles.

Lewisohn[4] states that blood containing 0·2 per cent. of sodium citrate will remain perfectly fluid, but in view of the fact that in some cases larger quantities are necessary I have generally used citrate amounting to 0·5 per cent. by allowing a 5 per cent. solution to mix with the blood in the proportion of 1 to 9. This leaves a safe margin and renders preliminary testing of the amount of citrate required in the case of any particular donor quite unnecessary. It is advisable for those who are inexperienced in the technique of transfusion to use this quantity of citrate, but there is no reason why smaller quantities should not be used, if preferred, when the method has been mastered. Lewisohn, who urges the dangers of an excessive dosage of sodium citrate, thinks that "we can safely state that we can introduce 5 g. of sodium citrate into an adult without any risk of a toxic effect." If this be so, then 1000 c.cm. of blood containing 0·5 per cent. citrate may safely be transfused, and larger quantities than this will very seldom be either desirable or obtainable.

Before proceeding in detail to the method which I have employed I should like to emphasise the importance of preliminary testing of the blood of the patient with that of the proposed donor. Some who have recently described their experience of a few transfusions in military cases have stated that the tests are both unreliable and unnecessary. This is not in accord with the experience of those who have studied the matter more thoroughly, and while admitting that circumstances may render delay unjustifiable and preliminary tests impracticable, one may still urge that routine transfusions should not be undertaken without proper precautions. Accidents may be few, but they have a high fatality and might almost always be avoided. For a more detailed discussion of compatibility the reader is referred to a former paper.[5]

Apparatus.

The apparatus to be described consists essentially of a graduated receiver into which the blood is withdrawn from the donor's vein, and of a burette from which a regulated flow of the citrate solution joins the current of blood as close as possible to its exit from the vein. The receiver is of 750 c.cm. capacity, but can be made in larger sizes if required. Both receiver and burette are supported upon a wooden stand, the two parts of which can be disconnected for convenience of packing. The height of the receiver can be adjusted by raising or lowering a support which is fixed by a screw at the back of the stand.



Apparatus for transfusion of blood by the citrate method.

The receiver is fitted with a rubber cork through which passes a glass T-piece. One limb of the latter carries a piece of rubber-tubing closed by a clip, B, the other is connected at first with a suction bottle, and later with a double bellows pump. The suction bottle is a spare receiver, and from its lower ends runs a piece of rubber-tubing which can be closed by a clip, C. If suction apparatus or pump be broken down, the operator may suck or blow with his mouth at one of the tubes from the receiver T-piece, but this will only be necessary as an emergency measure. The apparatus is supplied with needles of two sizes, and these are specially shaped so that their position in the vein may easily be maintained without danger of wounding the opposite wall. The base of each needle is ground to fit into a glass T-piece, and the latter is connected by rubber-tubing both with the receiver and the burette, the former connexion being supplied with a bulldog clip, A, the latter passing through a screw clip, S, which is fixed to the stand.

Before use the receiver and its cork and T-piece, the burette with its cork, and the needle, its T-piece and the rubber connexions therefrom, must be sterilised. A little cotton wool is placed in the tubes piercing both corks before they are sterilised, in order to filter the air which passes through when the apparatus is working. It is well to use dry heat for sterilising the receiver if possible; otherwise it should be rinsed out with the citrate solution after sterilising and cooling. The remainder of the apparatus may be sterilised by boiling or steaming.

The apparatus is fitted up with the suction bottle full of water, C being closed. The tap, T, is closed and the burette is filled with sterile citrate solution. T is then opened so as to

allow the citrate solution to run from the burette to the needle, and S is screwed up until the rate of flow of the citrate from the needle is about three drops per second; T is then closed and the citrate in the burette is made up to the zero. Thereafter T is used simply for turning on and off, and all regulating is done by means of S. A clip, B, cuts off the interior of the receiver from the outer air, and by opening C for a few seconds a little water is allowed to flow out and a slight negative pressure is created in the receiver. The tube closed by C leads to a bowl the height of which can be varied according to the amount of suction required. In general the fall between suction-bottle and bowl should be about 18 to 24 inches, and suction can be interrupted at any moment during the operation by closing C and opening B.

Description of Method.

Patient and donor should lie on beds situated conveniently near each other, but not necessarily in the same room. The arm to be used in each case is selected and the skin sterilised before commencing the operation. The veins chosen should usually be at the bend of the elbow, and in the case of the donor it is a good plan to choose, if possible, a vein which is joined by a large branch a little higher than the point of entry of the needle. There is usually no advantage, but frequently some inconvenience, in entering the needle in a distal direction.

Both donor and patient are placed on the side of the bed away from the arm to be used, so that there may be plenty of room for the apparatus on the bed. The donor's arm is stretched out on the base of the stand, being separated from it by a pad or folded towel. If the right arm be used the back of the stand will be upon its inner side; when the left arm is used the back of the stand will be upon its outer side. The position of the stand and the height of the receiver are adjusted so that there will be no drag upon the needle when it is in the vein, nor kinking of the rubber-tube from needle to receiver. The suspension of the receiver by the neck enables it to move freely in all directions when the operator is introducing the needle and subsequently to follow small movements of the arm. A tourniquet is now placed on the donor's arm sufficiently tightly to obstruct the veins without much diminishing the pulse at the wrist. A pneumatic armlet, such as is supplied with blood-pressure apparatus, is convenient for this purpose. In order to facilitate the introduction of a large and rather short-pointed needle it is advisable to make a small incision, 1/10 inch long, longitudinally through the skin over the vein, and this may with advantage be preceded by injection of a few minims of a 5 per cent. solution of novocaine.

When the needle is thought to be in the donor's vein A is opened and the satisfactory introduction of the needle is signalised by appearance of blood in the T-piece and almost immediately afterwards in the receiver. If no blood appears A must be closed and the position of the needle corrected. As soon as the blood appears T and C are opened and the rate of flow of the citrate in comparison with the rise of blood in the receiver is noted. As has already been said, 1 c.cm. of citrate should mix with every 9 c.cm. of blood, so that the citrate should fall to the levels 1, 2, 3, &c., c.cm. in the burette as the blood and citrate mixture rises to 10, 20, 30, &c., c.cm. respectively in the receiver. It is convenient for the operator, who keeps his left hand on the needle, to count aloud 10, 20, 30, &c., as the receiver fills, while an assistant watches the burette readings and controls S. The strength of the suction should be diminished if the donor's vein is small and easily emptied, but the common cause of diminishing outflow of blood from the arm (if the needle has been properly introduced) is excessive pressure by the tourniquet.

As soon as the desired amount of blood has been withdrawn, the tourniquet is released, A and T are closed, and the needle is withdrawn from the vein. Then C is closed, S is widely unscrewed, and T is opened for a few seconds so as to flush out all uncitrated blood from the needle. If necessary the needle can be replaced by a smaller or cleaner needle at this point. The tube from the receiver is closed by a clip, disconnected from the suction bottle, and attached to the double bellows, and the whole apparatus is then transferred to the patient, his arm being placed upon the stand. The level of the receiver is readjusted if need be, the selected vein is temporarily distended by pressure round the upper arm, a minute incision is made through the skin, and the needle is introduced. There is still a negative pressure in the receiver, so the opening of A should cause the patient's blood to displace the citrate solution in the T-piece, and only when this occurs will the pressure on the patient's vein be released, and B be opened to allow the negative pressure in the receiver to vanish. The blood is then gently pumped into the patient's vein. There is no danger of distending the heart, and 50 to 100 c.cm. may be introduced per minute, but if there be any doubt as to the compatibility of the blood employed it should not be introduced so rapidly. The fall of temperature in the blood is unimportant, since the transference of 500 c.cm. should usually be completed in about 20 minutes.

The apparatus is made by Messrs. Baird and Tatlock, of Cross-street, Hatton Garden, E.C. 1.

The method described was developed in the course of work done during the tenure of a grant from the Medical Research Committee in 1915, and to that Committee I desire to make my grateful acknowledgments.

References.—1. Weil: Journ. Amer. Med. Assoc., 1915, lxiv., 245. 2. Salant and Wise: Journ Biol. Chem., 1916, xxviii., 27. 3. See Weil, loc. cit. 4. Lewisohn: Annals of Surgery, 1916, lxiv., 618. 5. Stanafeld: THE LANCET, 1917, i., 488.

CHRONIC GONORRHŒAL INFECTION OF THE PROSTATE:

NOTES ON ITS PERSISTENCE AND ITS RELATION TO RECURRENT IRIDO-CYCLITIS.

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Georges Luys[1] says: "The seriousness of gonorrhœa lies in its tenacity." An old quotation attributed to Niessen runs: "The first attack of gonorrhœa is the only one not cured," in which there is much truth. In spite of such dicta there seems to be an impression amongst ophthalmic surgeons, which may be pardonable, and amongst some genito-urinary surgeons that gonorrhœa is not a persistent disease, and that when acute symptoms have subsided and all gleet has disappeared the disease is cured.

One genito-urinary expert[2] has stated that "the gonococcus cannot live on indefinitely in the tissues"; he does not define the word "indefinitely," but facts prove that the gonococcus can live on in the tissues for periods varying from 7 to 30 years after the last infection. It would be strange if the gonococcus in the matter of longevity proved an exception to other organisms. There would be more truth in stating that "there is *no* time limit—given suitable soil—to the existence of any organism in living tissues provided no treatment is enforced." For example, take such an "acute" organism as the typhoid spirillum; this has been demonstrated, alive and active, in extra-abdominal tissues 15 years, and in the gall-bladder 30 years, after an attack of enteric fever. Such a loose statement as the one above quoted[2] does harm, and indicates that ophthalmic surgeons must either study the subject of gonorrhœa themselves or rely only on a consensus of expert opinion.

Evidence of Persistence of Gonococcus in Genito-Urinary Tract.

During an investigation in 1912-13 into the etiology of so-called recurrent "rheumatic irido-cyclitis"[3] it was proved that in a series of nine of these cases the gonococcus was present in the genito-urinary tract in every one, after periods varying from 7 to 30 years from the date of the last infection. Fifty-six per cent. of these cases were associated with a gleet, but the remainder showed no sign of urethral disease: they, however, showed an infection limited to the prostate. Compare the four cases hereafter quoted. This investigation therefore brought to notice a class of gonorrhœal infection to which little attention has been given, judging from an almost complete absence of reference to them in text-books. The reason is no doubt due to the fact that they only come under the notice of the ophthalmic surgeon, who in treating them has only treated a symptom, leaving the etiological factor undiscovered and untreated.

Dr. G. Stoker, who has examined the prostate in all my recent cases, states that it is always enlarged, is often equal in size to the senile variety; it is hard and indurated but not tender under manipulation: he states that under treatment the prostate becomes soft and decreases in size; with this improvement the "threads" diminish in number as do the gonococci. The urine may be quite clear, or a few threads may be present, due to overflow from the prostate. If, however, the prostate is massaged per rectum before passing urine, the passed specimen may be deluged with "comma threads" and the gonococcus readily demonstrated in the centrifugalised deposit.

[1] Luys, G.: A Text-book on Gonorrhœa, 1913.
[2] Section of Ophthalmology, Proc. R.S.M., June 13th, 1917, p. 53.
[3] Cobbledick, A. S.: Ophthalmoscope, December, 1912—June, 1913.

Typical Cases.

The following is a typical case:—

CASE 1.—Patient, aged 40, contracted gonorrhœa ten years ago; the attack was complicated with rheumatism and he was ill for three months. Recovery was apparently complete. He has since never contracted gonorrhœa. Four years ago he married with his doctor's consent, but at once severely infected his wife with gonorrhœa. He is now anxious to know if he is still suffering from the disease.

Dr. Stoker's report.—The urine is quite clear. A full urethroscopic examination proved negative. Both lobes of the prostate are considerably enlarged and indurated. After massage of the prostate per rectum the passed urine contained many "comma floats," and on examination of the centrifugalised deposit gonococci were found.

This patient has been under Dr. Stoker's treatment for three months; the prostate is now normal in size, and very few threads can be discovered in the urine after massage; a few gonococci are, however, still present.

In this case, therefore, the gonococcus has remained latent for ten years, and was infective six years after contracting the disease.

CASE 2.—Patient, aged 31, sought advice for relief of headache in 1911. He was then in indifferent health, complaining of an increasing listlessness. His refractive error was corrected and nothing organically wrong was discovered. No genito-urinary examination was made, as the question of past gonorrhœa was not investigated. He was again examined in October, 1917, still complaining of listlessness, and although headaches were infrequent any near work caused aching of the eyes and general fatigue.

In 1916 he was passed for foreign service and served in the trenches in Flanders for five months. He then developed rheumatism—severe—in the left knee and ankle and slightly in the right knee. At Christmas the left knee was so bad that he could not walk. He was invalided to England and had seven weeks' treatment at Buxton, with some improvement. Discharged from the Army in April, 1917, for incurable arthritis.

Venereal history.—He contracted a slight attack of gonorrhœa 14 years ago, which was apparently quickly cured, as he suffered from no subsequent gleet. He has never since exposed himself to infection. Four years ago he suffered from a slight attack of rheumatism of the left knee.

Present condition.—Weak and nervous. All the joints of the lower extremities are stiff and painful, and also those of the left upper extremity. Although he has improved since his return to England, he says he feels quite an old man. The vision is good with his correction. Eye reflexes and fundi normal. Muscular balance defective; he is exophoric. Prism abduction in each eye only = 2°. Exophoria for reading corrected with 5° prism base in.

Urine.—Normal, except for the presence of a few small "threads." A diagnosis of probable chronic gonococcal infection of the prostate was made, causing both the arthritis and the defective muscular tone. He was referred to Dr. Stoker, who reported as follows: "Both lobes of the prostate enlarged, numerous 'threads' in the urine after massage of the prostate; gonococci found in the centrifugalised deposit. Urethroscopic examination negative."

Progress under massage and vaccine treatment has proved most beneficial; he can now read comfortably without the aid of a 3/4° prism base in, which had been incorporated in his correcting glasses. The articular and muscular pains have quite disappeared, leaving only a stiffness of the joints in the morning.

The points of interest in this case are: The latency of the gonococcal infection, discovered after 14 years. The possible relation between this chronic toxæmia and the defective balance of the eye muscles. The improvement in his rheumatic condition as a result of treating the infected prostate gland.

This case suggests that all cases of arthritis, *obscure in origin*, in the adult male should have the prostate examined by an expert, so as to eliminate or affirm the presence of a chronic gonococcal infection of the gland.

I quote these cases to show that the condition exists apart from irido-cyclitis, as it has been suggested that the gonococci could only be found in the prostate during an acute exacerbation in some other part of the body. I believe these cases are not uncommon, although the only reference I find to them is in Georges Luys's "Text-book of Gonorrhœa," where he briefly quotes two cases. The persistence of a gonorrhœal infection limited to the prostate is then no longer in doubt, it is a fact easily investigated and proved if the technique[4] suggested is carefully followed. Since 1913 I have been able to confirm fully these observations: in addition, further points have been elucidated, making for greater accuracy in the demonstration of the gonococcus and greater success in the treatment of the disease.

Technique.

The technique for discovering the gonococcus advised in 1912 has successfully stood further trial. Briefly recapitulated it consists in examining the urine for "threads": if these are present they should be allowed to settle, the overlying urine is drawn off and the deposit centrifugalised and examined for gonococci. If the urine is quite clear and free of "threads," at the *next* examination the prostate should be massaged before the urine is passed; if threads are present they should be treated in the same manner.

[4] Ophthalmoscope, June, 1913.

I now advise that the following points, on which stress was not previously laid, should be carefully noted.

i. Before collecting a specimen of urine for the centrifuge have the prostate massaged in *all* cases and not only in those containing no threads; by this procedure the likelihood of a positive result is increased and an extra bacteriological examination may be saved.

ii. *The urinary deposit should be examined at once or within from four to six hours of collecting the specimen;* after that period the threads and their contained gonococci become disintegrated through the strong hypotonic action of the urine. This is a most important point which, if neglected, will always ensure a negative result.

iii. Every case, even with threads in the urine, should be subjected to the Wassermann test, as syphilis may in addition be present (*vide* Case 4).

iv. Do not let an *absence* of previous rheumatism rule out a gonococcal infection, although a marked rheumatic history is the rule in these cases; Case 3 is the exception.

v. In my first series of cases I did not obtain a report on the condition of the prostate, neither did I insist that part of the treatment should consist in the systematic massage of the gland. Experience shows that if this is not insisted upon it will not be done, for the proceeding is not popular.

Dr. Stoker agrees that by the *careful* and *prolonged* treatment of the prostate and the use of a vaccine the gonococcus can be almost if not completely eradicated. He points out that pressure cannot be brought to bear so completely on the anterior lobe of the prostate; but, on the other hand, it contains but few glands compared to the posterior and lateral portions.

Cases of Irido-cyclitis.

The two following cases are fairly typical and bring out the points referred to above.

CASE 3.—Patient aged 52. *Venereal history.*—He contracted a slight attack of gonorrhœa 30 years ago, associated with a preputial sore, the scar of which is still evident. He never regarded either condition as worthy of treatment and rapidly recovered. A second attack of gonorrhœa was contracted seven years ago; this attack was also slight. There has been no fresh infection since that date. The patient is a robust and healthy type. He has no penile discharge. There is a marked scar on the dorsum of the prepuce.

History of the eye condition.—The first attack of irido-cyclitis was 11 years ago; it was very severe and painful and took some six weeks to subside. Since then he has had an attack regularly at intervals of from nine to 11 months. The left eye has been chiefly affected, the first right-sided attack occurred two years ago. He is now recovering from a severe left-sided irido-cyclitis. There is no history of rheumatism. *Vision.*—6/6, not improved. 6/18 Left.

Examination of urine and prostate.—There are few "comma threads" in the urine, but after massage of the prostate the urine passed was thick with "threads." Gonococci were demonstrated in the centrifugalised deposit. Dr. Stoker reports that both lobes of the prostate are enlarged and lobulated, very fibrous, but not tender. There is no stricture or urethral inflammation present.

Blood examination.—The Wassermann reaction is negative. Teeth good. No pyorrhœa present.

Treatment.—The usual treatment for acute irido-cyclitis was applied, and as the condition was subsiding a dose of 20 millions gonococcus vaccine was given; this produced a slight local reaction. Dr. Stoker undertook the treatment of the prostate, and reported that after the sixth expression of the prostate it had much improved, was smaller and softer, and that there were very few "floats" in the urine passed after expression. A second vaccine injection, ten days after the first, of a dosage of 50 millions produced considerable reaction in the eye.

Vision, eight weeks after onset of attack: Right 6/6, left 6/9.

The points of interest in this case are:—The limitation of the infection to the prostate. The demonstration of the gonococcus seven years after the last infection. The improvement of the prostatic condition under treatment. The provocative action of the vaccine. The absence of attacks of rheumatism prior to the eye inflammation; this is very exceptional.

CASE 4.—Patient aged 42. *Venereal history.*—Syphilis was contracted at 16 years of age; he had only three months' treatment. The first attack of gonorrhœa was contracted two years later; since then he has had several attacks (probably 12) of slight gonorrhœa, the last one seven years ago. None of these attacks were followed by any gleet.

History of eye trouble.—Many painful attacks (15 in all) of irido-cyclitis. The first attack, left-sided, was two years after contracting syphilis *but a short time before the first attack of gonorrhœa.* At intervals of 12 months one or other of the eyes suffered from severe inflammation until seven years ago. A left iridectomy was then performed by a well-known surgeon; this seemed to stop the attacks until nine months ago, when he suffered a most intense attack in the eye that had been operated upon.

History of arthritis.—The first attack affected the left knee 16 years ago and the second in 1910; each attack followed a gonorrhœal urethritis.

Present condition.—Very poor, small, and undersized. Definite oral sepsis with odour present; also some atrophic rhinitis.

Right eye.—Posterior synechiæ present with much exudation in the pupil. Vision 6/9 with $\frac{+ 2 \text{ D. sphere}}{+ 0{\cdot}50 \text{ cyl. ax. vert.}}$

Left eye.—Operation coloboma upwards; not much exudation. Vision 6/9 pt. with $\frac{+ 3 \text{ D. sphere}}{+ 0{\cdot}50 \text{ D. cyl. ax } 140°}$ (d. and o.).

Blood.—The Wassermann reaction definitely positive (Spitta).

Urine.—Threads present; no gonococci found. Dr. Stoker's report on the urinary tract was as follows:—

Prostate.—Senile in size and feeling. The left lobe is lobulated and soft; the right lobe enlarged and indurated at the margin. Left vas is enlarged and nodular near the globus major. The inguinal glands are enlarged; scars present in the right groin. *Urethroscopic examination negative.* A second examination (two weeks later) for gonococci proved negative.

Both the syphilis and gonorrhœa were treated, for, although no gonococci were found, the condition of the prostate was, in Dr. Stoker's opinion, typical of a gonorrhœal infection.

The chief interest in this case is the presence of signs of gonococcal infection limited to the prostate, coupled[5] with a positive Wassermann blood reaction. This raises the question as to which poison has been responsible for the irido-cyclitis.

The onset of the left-sided attack of irido-cyclitis *before* contracting gonorrhœa and the amount of exudation in the pupil suggest syphilis, whereas the resulting good vision, the regular periodicity of the attacks, averaging every 11 months, the history of gonorrhœal rheumatism, the condition of the prostate, &c., suggest a gonorrhœal origin. On the whole, I think it possible that this is a case of mixed infection. The condition had in the past been diagnosed as a case of gonorrhœal irido-cyclitis, and although under treatment on and off for at least 20 years the patient has not had a blood examination or any attention paid to his genito-urinary tract.

The iridectomy certainly seems to have lessened the frequency of attacks, as has been pointed out by Nettleship and Critchett, but it was no cure, nor could cure be expected when the underlying syphilis and gonorrhœa had not been treated; likewise, with treatment as above suggested, an iridectomy would probably not have been necessary.

The class of case represented by the above four examples is of great importance; they are true "carriers" of the disease, inasmuch as the patient is totally unaware of the presence of any infection. There can be no doubt that the muscular action brought to bear on the prostate during a strong sexual orgasm is sufficient to express a poisonous dose of gonococci, and so infect the female.

Criticisms on Above Findings.

S. H. Browning[6] has stated that he has rarely seen a case of eye syphilis properly treated, but I can assert that I have *never* seen a case of recurrent gonorrhœal irido-cyclitis in which any attempt has been made to obtain a *cure*. The result of a personal investigation of these cases satisfies me that in the treatment of chronic gonorrhœa the prostate has been "the neglected child," and routine examination and treatment per rectum have been the exception rather than the rule.

Some of the criticisms of these 1912–13 findings are not without interest.

1. One ophthalmic surgeon,[7] with the help of a genito-urinary expert, has endeavoured to demonstrate the gonococcus by a technique of his own and has failed. He described how in a series of cases the posterior urethra had been irritated with a silver salt, and a *smear* from the resulting discharge produced a negative result each time. This procedure, of course, was only levelled against the sub-epithelial urethral gonococci; the cesspool—the prostate—was ignored; neither was the deposit centrifugalised. This failure, of course, was due to faulty technique and an incomplete knowledge of the subject investigated.

2. It has been suggested that the organism demonstrated may not have been the gonococcus. The decision has always rested with an expert. I find that experts who examine from 30 to 40 slides daily, and find gonococci in over 90 per cent., have never any doubt about the identity of the gonococcus.

3. Although the gonococcus is present in the genito-urinary tract, the irido-cyclitis may be due to another organism, by preference a septic one. This, of course, is the most difficult criticism to meet, as short of a demonstration in the aqueous it cannot be proved; in the cases limited to infection of the prostate this criticism does not apply, but it does to those complicated with gleet and stricture, where secondary infection always takes place.

These so called "rheumatic" cases, however, are clinically widely different from those septic in origin. It would be well, however, for those in favour of a septic origin to examine the aqueous in these cases, for as long ago as ten years Mayou and Hancock demonstrated the staphylococcus in the aqueous in cases of septic irido-cyclitis.

As stated above, a genito-urinary surgeon (anonymous) has made the statement that the gonococcus cannot live on indefinitely in the tissues; A. W. Ormond[8] deduces from this that "these late cases must be due to *something else*, either associated with the gonococcus or independent of it." A strange deduction based on a false premise!

Summary.

To sum up, the first fact to grasp is the persistence and latency of the gonococcus when established in the prostate.

The next is that the oculist should obtain a first-hand knowledge of the vagaries of the gonococcus, for it is on him that the duty of curing the irido-cyclitis rests.

It is no longer admitted that the disease is cured when all perceptible urethral discharge has ceased; the prostate and vesiculæ may be the seat for many years of a gonococcal infection with all other parts of the urinary system unaffected.

I am convinced that in these so-called "rheumatic" cases a systematic examination would always reveal, quite apart from the presence of a gleet, a prostate infected by the gonococcus, provided the technique suggested is followed, and I do not doubt that the eradication of the gonococcus would in all probability prevent the recurrences which are such a feature of the disease.

[5] After two negative examinations of the urine I ordered a third, insisting on its taking place within one hour of collecting the specimen. Numerous colonies of intracellular gonococci were demonstrated. I attribute the first two negative results to some neglect of *Rule II.*

[6] Trans. Ophthal. Soc. U.K., 1916, vol. xxxvi., 29.

[7] Fisher, Proc. R.S.Med., Ophthal. Section, Dec., 1913, p. 64.

[8] Section A., Ophthalmology, Proc. R.S.M., June 13th, 1917, p. 53.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF PATHOLOGY.

New Counting Chamber for the Enumeration of Protozoa and other Organisms.—Autologous Grafting in Malignant and Non-malignant Conditions.

A MEETING of this section was held on Feb. 19th, Professor W. BULLOCH, F.R.S., the President, in the chair.

Mr. J. W. CROPPER read a note on a New Counting Chamber for the Enumeration of Protozoa and other Organisms (from the Marcus Beck Laboratories, Royal Society of Medicine). The chamber was designed on the principle of the hæmocytometer, but with a considerably larger area (namely, 5 × 5 mm.) of the platform ruled in squares, the latter also being increased in size. For various practical reasons the depth of the chamber was retained as 1/10 mm. as in the older chambers. Thus the organisms or cells in a comparatively large volume, namely, 2·5 c.mm., could be counted, and in cases where the number present was scanty it was possible to count a sufficient number of organisms to minimise the statistical errors which were inseparable from a small count. The size of the smallest squares had been so arranged that they occupied the central half of the diameter of the field of the microscope, using a 1/6 inch objective and a × 7 eye-piece, this permitting a rapid count being made. In cases where the organisms or cells could be easily recognised with a low-power magnification it had been found preferable to employ an extemporised device, consisting of a large-sized microscope slide on which columns 1/2 mm. in width had been ruled. On this a ring of paraffin wax, applied while molten by means of a turn-table, was placed. A definite volume—say, 10, 20, or more c.mm.—of the suspension of organisms to be counted was expelled from a graduated capillary pipette on to the ruled slide and a cover-slip was allowed to fall upon it. The organisms in the *whole of the drop* were easily and rapidly counted by working along the columns from end to end. The chamber and ruled slides could be obtained from Messrs. H. F. Angus and Co., Wigmore-street, W.

Dr. J. A. MURRAY read a paper on Autologous Grafting in Malignant and Non-malignant Conditions. He said that

the results of the long series of auto-transplantations made by Haaland had been confirmed by Apolant, F. C. Wood, and himself, and it might safely be said that there was no type of undoubted malignant new growth in which auto-transplantation had not been successful. The time had therefore arrived when in all investigations necessitating the most rigorous demonstration of the malignant nature of new growths the performance of auto-transplantation should be included in the tests applied. In his experiment an attempt had been made to apply this test to the discrimination of an exceedingly ill-defined group of new growths—namely, those of lymph-nodes—lymphomata. A great variety of growth-like enlargements of lymph-nodes occurred in the mouse and might affect any one of the three component tissues to the exclusion of the others. After repeated failures with a considerable number of lymphomata involving homologous inoculation into many hundreds of normal mice, it was decided to relinquish this direct attack and in the first place to attempt a segregation of those growths which could conform to the behaviour of malignant new growths of other tissues by growing progressively when inoculated into the spontaneously affected mouse itself. When this was done the astonishing result was obtained that even when local recurrence and progressive involvement of other lymph nodes occurred the autologous grafts failed to grow. Usually the latter were found as opaque white necrotic nodules, smaller than the piece of tissue introduced. On microscopic examination the cells might still be alive, and in a few cases mitoses were seen in them; in others the process of absorption was in progress or complete. This striking contrast between the failure of the graft and the natural progress of the disease differentiated the new formations dealt with from the ordinary carcinomata and sarcomata and made it difficult to believe that they were true malignant new growths. They were apparently in the majority of cases reactive hyperplasias, most probably of toxic origin.—Professor S. G. SHATTOCK observed that the difficulty of diagnosing a lympho-sarcomatous neoplasm from a lymphatic pseudoplasm was admittedly great; and metastasis might, of course, arise in connexion with an infective process, as well as in a sarcomatous. The test adopted by Dr. Murray was an important one, and the speaker saw no reason why it might not be applied in the human subject. For the excision of a small piece of a doubtful neoplasm, and its transplantation beneath, say, the loose skin of the dorsum of one of the fingers, would not be of serious moment; if the graft commenced to grow it could be excised whilst still a local lesion. Theoretically, it was not easy to understand why the transplantation of a lymphatic pseudoplasm should not, in Dr. Murray's experiments, have been followed by growth, seeing that any virus present in the tissue would necessarily have been transferred with the latter. In the human subject the evidence of autologous implantation might be naturally furnished by contact infection from one part of a serous cavity to another. The speaker had, for example, examined a diffuse thickening of the pericardium, which histologically consisted simply of lymphatic tissue, and where the opposite surface of the epicardium was the seat of a nummular and smaller nodular formations highly suggestive of contact infection. There were metastatic formations in the kidneys. If this was accepted as an instance of implantation it would at least prove the existence of lympho-sarcoma in man, the occurrence of which seems to hang in the balance in view of Dr. Murray's research.

Dr. MURRAY also showed and demonstrated Three Tumours from the Zoological Gardens.

SECTION OF ELECTRO THERAPEUTICS.

Electrical Treatment of Cases of Injury to Peripheral Nerves.

A meeting of this section was held on Feb. 15th, Dr. HARRISON ORTON, the President, being in the chair.

Lieutenant NOEL BURKE, R.A.M.C. (T.), read a communication on the Electrical Treatment of Cases of Injury to Peripheral Nerves. He complained that there had been very great lack of unanimity in the treatment which was most suitable for these injuries, a point which, in the net result, was quite serious. Even electro-therapeutists were not fully agreed as to the best methods in every kind of injury, while outside that specialty there was a wide diversity of view and practice. Some even counselled doing nothing for such cases beyond the application of a splint and leaving the rest to Nature, though the number of such was gratifyingly few. With many practitioners there was a great lack of knowledge as to how electricity ought to be applied, what form to use, and the results which might reasonably be expected from it in any given class of case. Massage and electricity should not be regarded as twin sisters: their closest relationship was that of cousins, and though of much younger growth, electricity was the more important of the two. When asking, in a particular case, about previous electrical treatment it was desirable to know not only what was given but also who gave it. The speaker believed that electro-therapeutists were too much bound by tradition and too modest; they had not insisted enough in print on the claims and possibilities of their important department of practice in many varieties of case. He urged more frequent mutual discussion and comparison of results. Lieutenant Burke then discussed in detail, aided by the exhibition of a number of slides by means of the epidiascope, the various forms of nerve injury and degeneration encountered, and the results he had obtained in them. He said that in England neurologists had a broad view of the treatment of peripheral nerve cases: they recognised the necessity of postural treatment, and most of them were convinced that electrical treatment was needed, though it was placed second in importance to massage. Surgeons seldom did justice to treatment by physical means. The Americans seemed to specialise more on muscle training and systematised exercises. He concluded by discussing the consultative methods which should obtain in hospitals among members of the various specialties, in which way only could the best results be expected.

A general discussion followed.

SOCIÉTÉ DE BIOLOGIE, PARIS.

THE following is a summary of papers read at the meeting of this Society on Feb. 9th:—

L. BORY.—Nature of the Specific Substance of Syphilitic Serums in the Σ Reaction.

BAZIN.—Experimental Research on the Antiseptic Power of Vincent's Boro-hypochlorous Powder.

B. a étudié comparativement le pouvoir antiseptique de la poudre de Vincent, de la teinture d'iode et de l'iodoforme. Une terre contenant 9 à 11 millions de bactéries par grammes, parmi lesquelles 1° *Vibrion septique* (obtenu par inoculation), le *B. Coli*, le *Proteus vulgaris*, le *B. perfringens*, etc., a servi à ces expériences. Dix centigrammes étant agités dans un litre de bouillon, il faut, pour empêcher le développement des bactéries, ajouter: iodoforme, 25 g.; teinture d'iode, 10 g.; poudre de Vincent, 5 g. Pour détruire les bactéries d'un gramme de terre en 24 heures, il faut: teinture d'iode 20 g.; poudre de Vincent, 8 g. L'iodoforme est sans action à hautes doses. La teinture d'iode est toxique, irritante d'une manière intense pour le péritoine du cobaye. Elle amène la mort de l'animal. L'iodoforme agit de même. Le mélange Vincent n'amène qu'une réaction légère. Dans les plaies cutanées, la teinture d'iode et la poudre de Vincent se comportent de même. Dans les plaies musculaires, la teinture d'iode est fortement caustique. La poudre de Vincent est très bien tolérée. Les plaies souillées de terre peuvent être protégées par la teinture d'iode, à la condition que l'épluchage chirurgical soit précoce. Au contraire, l'emploi de la poudre de Vincent les a protégées pendant 2 et 3 jours contre l'infection. Dans ces conditions les sutures faites après épluchage donnent d'excellents résultats.

P. P. LEVY and J. DE LEOBARDY.—A Practical Method of Finding the *Sp. ioteroh&morrhagiæ* in the Urine.

BONNEFON.—Corneal Grafts.

B. a étudié la régénération et la transplantation du tissu cornéen sous le contrôle permanent du microscope et ses conclusions au double point de vue biologique et chirurgical sont les suivantes: malgré des apparences d'intégrité parfaite, les greffes de tissu cornéen dégénèrent rapidement après transplantation et sont régénérés secondairement par le porte-greffe. Seuls les éléments épithéliaux survivent. La présence ou l'absence de cette régénération permet de classer les transplantations cornéennes en 1° assimilables (autoplastie et certaines hétéroplasties); 2° non assimilables (hétéroplasties, où la régénération avorte par suite d'obstacles mécaniques apportés à la pénétration des éléments cellulaires régénérateurs, ces greffons comme des corps étrangers, tolérés). L'évolution clinique et histologique de la kératoplastie montre avec quelle circonspection il convient de parler de survie des tissus transplantés; quelle qui soit la perfection du résultat clinique obtenu, seule l'histologie expérimentale permet d'apprécier la valeur respective des mots: survie et régénération.

CH. RICHET.—Normal Variations in Urea.

R. étudie les variations individuelles du taux centesimal de l'urée chez deux individus normaux, soumis à un régime alternativement très azoté et peu azoté. Différence individuelle curieuse: chez l'un, le taux reste à peu près invariable; chez l'autre, il varie de 1 à 6. L'élimination d'azoté est la même; ce qui est différent c'est la quantité de l'eau excrétée.

H. CARDOT and H. VIGREUX.—An Automatic Pipette for Delivering Culture Media.

P. GERARD.—Serum Diagnosis of Syphilis with Heated and Unheated Serum.

THE LANCET.

LONDON: SATURDAY, MARCH 2, 1918.

The Proposed Ministry of Health.

WE have received in the same week three communications from public officials who have each the right position of administrative experience and the scientific knowledge from which to state their views dealing with the formation, scope, machinery, and prospects of the Ministry of Public Health, which on all hands is allowed to be one of the great steps in future social governments. The views of Dr. E. W. HOPE, the medical officer of health for the City and Port of Liverpool, Dr. MEARNS FRASER, the medical officer of health for Portsmouth, and Dr. SIDNEY BARWISE, the medical officer of health for the county of Derbyshire—all men whose opinion on the question, both at large and in detail, must be highly valuable—conflict in some ways, and so prove to demonstration the difficulties ahead of us. And it must be pointed out that those difficulties are national, not professional, because, although the medical profession will provide inevitably the main executive officers of any Ministry of Health, it is the nation in whose behalf their work will be discharged, and it is the population at large who will benefit by the conditions of that work being made as wise as possible, free from overlapping, free from vexatious interference, but yet properly and closely responsible to some coördinating authority.

Dr. HOPE, whose report has been prepared at the request of his health committee, and is already published as a pamphlet, gave an address recently at the Royal Institute of Public Health in which he recapitulated his views. Recognising that the Ministry of Health should be dominated by the intention to prevent disease, as the enormous advance in medical science has discounted the urgency of many problems of treatment, he has arrived at the final conclusion that the great and successful activities of the Local Government Board point clearly to it as the body under whose ægis the Ministry of Health should do its work. He points out that the National Insurance Acts have rendered ameliorative measures simpler and cheaper, and gives a reason for believing that the coöperation of the Approved Societies should be of value, in that the financial interests of all insurance companies, whatever their constitutions and rules, lie in the lessening of sickness and the postponement of death. Dr. BARWISE likewise decides in favour of making the Ministry of Health a branch of the Local Government Board, with the President of that Board himself the Minister. He is influenced in this view not so much by respect for the advantages offered as by his estimate of the value of the treatment now administered to panel patients under National Insurance. He obviously does not think that the provisions of that legislation, as time goes on, will be found to contain within themselves the germ alike of preventive and therapeutic medicine and here his criticisms, though they will be largely endorsed, fail to do justice either to the measures or the administrators. It may be granted that the provisions for treatment under National Insurance might in many places be much improved, but it must equally be granted that in other neighbourhoods, especially those crowded by poor and industrial populations, a truly great reform in the conduct of domestic medicine has taken place. The out-patient abuse in some of the great general hospitals, as well as in some of the most necessary special institutions, has been checked by panel practice. There is less delay in securing attention, more individual care is shown, and there has grown up in frequent directions something of that sympathetic alliance between the doctor and his charges which counts so highly in the early detection and effective arrest of many pathological conditions. We are perfectly aware, in saying this, that in the practices of some panel practitioners the old disorder, which marked the out-patient department of many hospitals, has manifested itself, and there is no doubt room for widespread changes in the organisation of panel practice. Those, however, who talk as if panel practice never can, and never will, prove of real service to the community may be asked to remember that the enormous revolution in professional machinery created by the National Insurance Acts had hardly come into effect before an international war not only altered the whole of our social life, but dislocated every conceivable arrangement for the individual treatment of groups of patients by their selected medical officers. To judge of panel practice by what, as yet, it has been able to effect is not to look at the whole picture fairly. A valuable notion for providing, under county jurisdiction, medical institutions to carry out the treatment of the class of patient falling under the panel category is put forward by Dr. BARWISE, who thus actually suggests a direction in which National Insurance and the Local Government Board could coöperate.

Dr. FRASER, in the excellently clear presentment of his views which we publish in another column, proposes that the Ministry of Health should evolve from the Local Government Board, and that the National Insurance organisations should exercise all their influence over the health administration of the country under the ægis of that Board. He considers that these organisations should only have sectional jurisdiction, with no right to speak for or control the general working of public health administration, but he thinks that establishments paid for out of local rates, such, for example, as hospitals for infectious diseases, should be left in the hands of the local sanitary authorities or friction will ensue. That is, of course, a very important point. Of the work of any Ministry of Public Health the energies of the National Insurance Commission, with the modifications suggested by experience, must form an integral part. The National Insurance Commission is linked by its Bureau of Medical Research to what is progressive

in medical thought and to practical therapeutics by its responsibility for the medical treatment of a third of the population. It is true that Dr. BARWISE suggests that the Bureau should be directed by the Ministry of Public Health independently of National Insurance organisations, but this does not seem to us a wise or even possible alteration having regard to the source of the supporting funds. A Ministry of Health constituted so that the general energies and driving force of the Local Government Board are supplemented by the more particular forces of the National Insurance Commission should leave us little apprehension for the future of the general practitioner or for the health of the nation.

Failing the creation of a new department, which at the moment cannot be looked for, we think that the cause of medicine, and therefore the welfare of the country, would be best served by constituting the Local Government Board the central authority for the health of the people. Its existing functions are closely connected alike with medicine and with the life of the people, so that any other health organisation acting independently from it would be in perpetual contact with it, and the delays and expenses following upon recurring discussions might largely counterbalance the advantages to be derived from the possession of a new central authority. The Unionist Social Reform Committee, whose valuable pronouncement upon the health of the people we reviewed in THE LANCET on its appearance,[1] arrived at a similar conclusion; and we add to the reasons for their faith, which are so excellently adduced in their report, a further one, to which we have already drawn attention in these columns. The Local Government Board is heavily burdened with multifarious responsibilities towards the State, and there is sound reason for believing that once the central office for the health of the people were grown vigorous under its far-reaching influence separation would quietly occur, and a new Health Department would take position as one of the great Government bureaux. A separation of the Department of Health from the Local Government Board, which took place in this way, would have the advantage that to the separating body there would be naturally adherent many medical activities which cannot now by some movement of violent readjustment be torn from the Board and handed to any other body.

Physiology and the Drink Problem.[2]

MEASURES have been adopted in the several belligerent countries to combat the influences of alcoholism on national efficiency, and amongst these the most interesting to the social reformer is probably the system of regulation which has been enforced in our own country by the Central Control Board, a special department set up to deal with liquor traffic under the Defence of the Realm Act. Those who have observed the work of this Board, as well as the public utterances of its chairman, Lord D'ABERNON, will have had little hesitation in concluding that the success which has attended its operations has been due in the main to the fact that, unlike previous efforts to deal with the questions involved, the policy of the Board has been based from the outset on a strictly objective study of the problem; it has been adjusted to facts as they are, and has not been framed to fit the conceptions of prejudice or enthusiasm.

Such an attitude implies clear recognition of the predominant importance of the physiological factors of intemperance; and it has been, indeed, from the first distinctive of the Control Board, as may readily be gathered from the character of its regulations, to lay special stress on this aspect of the drink question. Formal and explicit evidence of this characteristic has now been given by the publication, under official auspices, of a study of the physiologieal action of alcohol. This work, which is essentially a review of the existing state of knowledge on the subject, has been prepared by the Advisory Committee appointed by the Control Board in November, 1916, under the chairmanship of Lord D'ABERNON, the other members being Sir GEORGE NEWMAN, M.D., Professor A. R. CUSHNY, Dr. H. H. DALE, Dr. M. GREENWOOD, Dr. W. MCDOUGALL, Dr. F. W. MOTT, Professor C. S. SHERRINGTON, and Dr. W. C. SULLIVAN. The representative character of the Committee guarantees the soundness and impartiality of the views put forward; and we have a further assurance on this point in the fact that, as Lord D'ABERNON mentions in the preface which he has contributed to the volume, the primary object of the writers was to prepare the way for further research—that is to say, the critical analysis of existing evidence was not undertaken with a view to establishing comprehensive or final conclusions, but rather for the purpose of determining in what direction further evidence must be sought before such conclusions can be drawn. The work is thus a statement of our ignorance as much as of our knowledge, and this adds largely to its educational value, inasmuch as nothing has contributed more to confusion of opinion in regard to the drink problem than the perpetual promulgation of views and theories based on erroneous or inadequate data. It must help materially to clarify the issues if the limits of real knowledge are more justly appreciated. The spirit and temper of the book should also do much to promote in the general public—to whom it is specially addressed—a more intelligent apprehension of the subject by freeing its discussion from some of the false associations which naturally attach to any question that has long been a theme of controversy. As an illustrative instance of the value of the work in this respect we may indicate its treatment of the old and futile question, "Is alcohol a food or a poison?" with the implied assumption that the qualities of a food and the qualities of a poison are necessarily opposed and mutually exclusive. The Committee have dealt effectively with the fallacies underlying this mode of stating the case, and have disengaged the real point at issue by showing that what should properly be asked is, In what precise sense can alcohol be described as a food, and under what

[1] THE LANCET, April 14th, 1917, p. 579.

[2] Alcohol: Its Action on the Human Organism. A Statement by the Advisory Committee of the Central Control Board (Liquor Traffic). Pp. 313 + x. London: H.M. Stationery Office. 2s. 6d. net.

conditions does it act as a poison? To these questions the Committee give replies as positive and definite as the present state of scientific knowledge permits.

The provisional conclusions of the Advisory Committee of the Control Board are briefly these:—

1. Alcohol is undoubtedly a food, in the sense that its combustion in the body can supply a considerable part of the energy needed by the organism.

2. Unlike other foodstuffs, it cannot be stored in the system in altered form, to be used as required, but remains as alcohol in the blood and the tissues, on which, if present in excessive amount and over prolonged periods of time, it exercises a deleterious influence.

3. By reason of this latter characteristic alcohol cannot safely be used as a large element in the diet without risk of injury to health, and it is on this account, and also because of its disturbing effect on nervous functions, quite unsuitable as a staple food for industrial workers.

4. Its action on the nervous system, which is the chief *raison d'être* of the ordinary use of the alcoholic beverages, in health and in disease is, with the possible exception of its effect on the respiratory centre, essentially narcotic and not stimulant.

5. The moderate use of alcohol by the average normal adult is physiologically unobjectionable, provided that it is limited to the consumption of beverages of adequate dilution, taken at sufficient intervals of time to prevent a persistent deleterious action on the tissues.

These conclusions furnish a solid basis for the discussion of the wider issues of the drink question, and—what we have already indicated as the special object of the Committee's labours—a starting-point for further research regarding numerous points, many of them of immediate practical importance, as to which no precise and reliable data are at present available. It is satisfactory to learn from Lord D'ABERNON'S preface that such work is already in progress, and that the Committee are already in possession of the results of experimental investigations concerning such questions as the effect of dilution on the action of alcohol, and the difference in inebriating effects between beer, wines and spirits. The publication of the present report is to be welcomed, therefore, not only for its intrinsic value, but for its promise of a further application of science to the solution of the liquor problem.

ABERDEEN ROYAL INFIRMARY.—At the annual meeting, on Feb. 13th, of the corporation of the Royal Infirmary and Lunatic Asylum of Aberdeen effective reply was made to the criticism that the needs of the local civilian population had been sacrificed to the treatment of wounded sailors and soldiers in the infirmary. The average number of naval and military sick throughout the year had been 26 (16 soldiers, 10 sailors). The report of the infirmary showed 650 medical and 2291 surgical cases treated as in-patients during the year, and 12,514 treated in the out-patient department, a reduction of 294 in- and 2058 out-patients compared with last year. The average number of beds in daily occupation was 233, and the average number of days in hospital was 28. A scheme for the treatment at the infirmary of venereal diseases for the city of Aberdeen and adjoining counties has been adopted provisionally, subject to three months' notice on either side. At the Royal Asylum the admissions during the year were 99 males and 113 females. Of these 27 were admitted between the ages of 15 and 25, 67 between 40 and 55, 28 between 58 and 68, and 16 were over 70.

Annotations.

"Ne quid nimis."

THE AIR MEDICAL SERVICE.

As may be seen from the discussion in the House of Commons as to the best method of providing an efficient medical organisation for the Air Force, reported in another column by our correspondent, a compromise has for the present resulted which pleases no one. The very strong committee over which Sir Watson Cheyne presided drew up a scheme for an independent medical service which, after receiving the approval of the Air Board, came to nought owing to an intrigue—the unpleasant word has been openly used. A second committee then drew up an alternative scheme, which has now been accepted by the Air Board in order to save further friction and trouble, and Sir Watson Cheyne has also given it his reluctant assent in order to avoid what he considered the greater evil—viz., further delay in the training of air medical officers. Both the Government Department and Sir Watson Cheyne take rather cold comfort from the proviso that the scheme is to continue only "for the duration of the war," and they believe that a separate air medical service is bound to come later. In the scheme now being put into operation the air medical officers are to be under the control of a committee composed of the Directors-General of the two senior services, the Vice-President of the Air Board, an administrator and assistant medical administrator of the Air Force, along with a neurologist, a physician, a surgeon, a physiologist, and the secretary of the Medical Research Committee. Medical appointments will be made by the President of the Air Board on the nomination of this committee, the officers appointed receiving a temporary Air Force commission and wearing Air Force uniform, while the administrator is to have direct access to the Secretary of State. Major Baird, Under Secretary to the Air Ministry and the spokesman for, if not the defender of, the compromise scheme in the House of Commons, sees some advantage in the scheme in so far as the Navy and Army are made jointly responsible for its success, instead of being in determined competition for medical staff, but Sir Watson Cheyne punctuated his acquiescence with a series of cogent reasons for the setting up of a special service which may be summarised as follows:—The accidents of aviation are now due as much to the human as to the flying machine; the airman's nervous system is the crucial point of the whole service; true binocular vision and a rapid connexion between sight and action have been shown to be the important matters, and on these it is imperative for physiologists and physicians to concentrate. Equally essential he considered to be the appointment of trained medical men to stand in the relation to the airman in which the athletic trainer stands to those whom he trains. It cannot be gainsaid that the study of the ailments and disabilities of flying men is a subject as special as ophthalmology or bacteriology, and in a recent article in THE LANCET (Feb. 2nd, p. 190) our readers will find set out in detail and particularity the unanswerable reasons for this view. The loyal work of the medical officers to be appointed to the new service will, we doubt not, extract all possible success from the compromise scheme, but a great opportunity has been lost.

WAR CONDITIONS AND THE PHYSIQUE OF SCHOOL CHILDREN.

LONG wars affect the physique of a nation not only by the killing or maiming of a proportion of the young adult males, for the effect of privation or disease upon the civilian population, and especially upon the growing children, may be a more striking phenomenon. The information available leaves no doubt that of the nations now at war there are several that will feel for years to come the effect of present starvation upon the young. Careful watch is being kept upon the results of war conditions in this country, especially in London. The Elementary Education Committee has presented a report to the London County Council based upon the results of the medical inspection of the children in its schools up to the end of 1917. From this report it appears that there has been a constant and steady improvement in the condition of the children throughout the whole of the war period, and that the results of medical inspection during the third term of 1917 are the best that have ever been attained. Not only are the numbers of children whom it is found necessary to feed in schools lower than they were during peace time, but the percentage found in a poorly-nourished condition at the medical inspections is less than half the percentage found in 1913. Thus steady employment, high wages, and increasing welfare activity have up to the present more than counteracted the possible evil effects of war conditions upon the children. This, as the Education Committee reports, is a matter for profound satisfaction. We are not, however, by any means yet out of the wood and we shall await with concern the London Education Committee's future reports upon this question, which will, no doubt, seeing the importance of the matter, be issued at least quarterly during the present year. There is one point affecting the new Rationing Order for meat which is of some importance. The medical inspection figures suggest that the 8-year-old children have a greater liability to nutritional disturbances than either the babies or the leavers. Lord Rhondda has decreed that children under 5 shall have special preference in regard to milk, while children of 10 and upwards shall be counted as adults in regard to meat. No special provision is made for children between 5 and 10 in regard to protein income, and they are to be placed on half rations in regard to meat. Seeing how important the particular age in question is in respect to nutritional defects this seems to be an oversight on the part of the Food Controller, who might well be urged to do something to fill this gap.

THE BUBO OF SOFT CHANCRE.

THE bubo of soft chancre is not seen to-day in civilian practice so frequently as the accounts in older text-books suggest was formerly the case, but in all navies it causes much trouble. Its course is generally chronic, and prolonged suppuration precedes cure. Dr. U. Valle, a surgeon-major in the Italian Navy, discussed in the *Annali di Medicina Navale e Coloniale* for November, 1917, the best treatment of such cases, viewing with disfavour the routine practice of a long incision into the gland as soon as the patient presents symptoms. Pointing out that it is not only the syphilitically infected gland in which spontaneous absorption takes place, he prefers not to interfere until the temperature curve suggests that suppuration has occurred. He then makes an incision half-an-inch long at each end of the bubo; through these he introduces a Volkmann's spoon to remove all thoroughly softened tissue, washes the abscess cavity out with 2 per cent. nitrate of silver solution, finally, with an eyed probe carrying a gauze seton quite through the cavity. He claims that cases so treated are well generally in ten days, but admits that some cases are disappointing. One man had a bubo in each groin and the same treatment in each, and though one groin healed in nine days the other took seven weeks.

THE MEDICAL BENEFIT OF INSURED PERSONS OVER 70 YEARS OF AGE.

A MEDICAL correspondent has been surprised to find himself obliged to attend an insured person over 70 years of age, as being entitled to medical benefit, having "thought that all persons attaining the age of 70 ceased to be insured." On inquiry of the Insurance Committee he has received the reply that "an insured person, if he has paid more than 27 contributions under the National Insurance Act prior to his reaching the age of 70, remains entitled to medical benefit during his life time." This appears to be perfectly correct, and in case other medical practitioners on the panel should be under the same mistaken impression as the correspondent referred to, the matter may be stated thus. Contributions in respect of employed contributors cease on their attaining 70 years of age, and in their case the right to sickness and disablement benefit ceases also. The latter provision, under Section 8 (3) of the Act of 1911, does not, as will be observed, include the cessation of medical benefit. Under the same (the original) Act a person of the age of 65 or upwards might not be insured either as an employed or voluntary contributor if he had not previously been insured, but employers of such persons had to pay the employees' contributions. The Act, however, now applies to all persons who on July 15th. 1912, were of the age of 65 or upwards and under 70, and to persons who since that date have attained or may hereafter attain 65, in the same way as it applies to other persons (National Insurance Act, 1913, Sec. 3 (2)). The proviso is, however, added that persons who are of the age of 65 or upwards at the time of entering into insurance are not entitled to medical benefit after attaining the age of 70, unless the number of weekly contributions paid by or in respect of them exceeds 26. In the case referred to, as the Approved Society had given no notice to the Insurance Committee of its member having been deprived of his benefits for any cause on his reaching the age of 70, the Committee is entitled to assume that the society is correct in informing the medical man that he is to continue to attend. Such hardship as there is may be accentuated by elderly men who had ceased to work before the war having now resumed employment and become insured, either again or for the first time. There has been plenty of time for these to have paid their contributions for the specified half-year, and so to have gained for themselves the right to medical benefit for life. As to whether in individual instances an Approved Society may fail to record an insufficiency in the number of contributions before the age of 70, which would disentitle the insured person to benefit, it is difficult to say. The omission is very unlikely to occur, and would not be easy to discover except by inquiries addressed in the first instance by the medical man to his patient.

EXHAUSTION PARESIS SIMULATING EARLY GENERAL PARALYSIS.

IN the *Journal of the American Medical Association* Dr. J. Ramsay Hunt has called attention to a condition brought to light in the training of America's armies which was new even to a neurologist of his experience—the complete simulation of early general paralysis by paresis due to exhaustion. He was given the duty of making a neurological examination of about 1500 men in an officers' training camp. Among these he encountered four cases, of which the following is typical.

A man, aged 36, had been in the camp for a month engaged in the arduous work of digging trenches. For some years he had practised law and led a sedentary life. He denied having had syphilis. He complained of vertiginous seizures, headache, and depression. The face was flushed, the expression dull, and the speech tremulous. The pupils were dilated and unequal, the right being slightly the larger. The reaction to light was sluggish and scarcely appreciable. The reaction on accommodation was preserved. There was no optic neuritis. There were marked facial and some lingual tremors. When the effort was made to close the eyes and expose the teeth simultaneously the muscles of the face broke into a coarse tremor identical with that of early general paralysis. Speech was also tremulous and suggestive. On repetition of test phrases there was distinct dysarthria, with some syllable stuttering and associated movements of the upper facial muscles. There was a coarse tremor of the hands and fingers and the writing was irregular and tremulous. The tendon reflexes were all active. Mentally the man was dull and slow and performed problems in mental arithmetic with difficulty and occasional errors. Thus the clinical picture coincided with that of early general paralysis. Wassermann tests were therefore applied to the blood and cerebro-spinal fluid, but both were negative. After a week's rest there was marked improvement. The pupils were equal and responded actively to light, and the tremors and mental dullness had disappeared. The final diagnosis was acute exhaustion of the cerebro-spinal centres.

It is well known that mental dullness and tremors may be produced by fatigue. In neurasthenic states tremor is an almost constant symptom. It is not, however, generally known that in simple exhaustion the pupils may be dilated and react sluggishly to light. Dr. Hunt suggests that the toxins of fatigue may influence the sympathetic innervation of the pupil, producing dilatation and retardation of the reaction to light. In all the cases the patients were business men, unaccustomed to exercise, and suddenly put to the arduous work of the training camp. No such "experiment" would be possible in civil life—a fact which explains the novelty of the condition.

THE PROGRESS OF INDUSTRIAL CHEMISTRY.

THE issue is forthcoming of a series of monographs on industrial chemistry, comprising the remarkable developments that have taken place in this direction in recent years. The announcement is welcome; it is made by Messrs. Longmans, Green, and Co., and the work of editing the monographs has been entrusted to Sir Edward Thorpe, who has secured the services of a strong staff. There is scarcely an industry that has not benefited directly or indirectly from the increasing application of chemical science, while the recondite knowledge of one generation becomes a part of the technology of the next. Phenomena at one time regarded as of mere academic interest have given the lead to immense improvements in productive processes; and the doctrines of chemical structure and constitution tentatively taught at one period have formed the basis of large-scale synthetical processes at another; for example, at the present time we are witnessing the widespread application of catalysis in manufacturing operations of the most diverse character. This obscure phenomenon has, in fact, given a remarkable stimulus to the economic output of many valuable products. The following are among the promised monographs, and some idea of the wide and important ground covered may be gathered from the titles they bear, which are as follows: "The Scientific Use of Coal"; "Catalysis in Industrial Chemistry"; "Synthetic Colouring Matters: Sulphur Dyes"; "Organic Compounds of Arsenic and Antimony"; "Synthetic Colouring Matters: Vat Colours"; "Naphthalene"; "Synthetic Colouring Matters: Azo Dyes"; "Utilisation of Atmospheric Nitrogen: Synthetical Production of Ammonia and Nitric Acid"; "Cement"; "Edible Oils and Fats"; "The Principles and Practice of Gas-purification"; "Refractories"; "The Applications of Electrolysis in Chemical Industry"; "Ozone and Hydrogen Peroxide"; "The Natural Organic Colouring Matters"; "Industrial Applications of the Rarer Metals"; "Liquid Fuel for Internal Combustion Engines"; "Cellulose Silk"; "The Zinc Industry"; "The Electric Arc in Chemical Industry"; "By-product Coking Practice"; "Organic Synthetic Reactions: Their Application to Chemical Industry"; "Colour in Relation to Chemical Constitution"; "Synthetic Colouring Matters" (4 volumes); "Synthetic Drugs: Local Anæsthetics." Those who are responsible for organising this valuable series may well be congratulated on this wealth of material illustrating the applications of recent scientific knowledge to modern manufacture.

THE VALUE OF THE MUSEUM.

Mr. Tate Regan, in a lecture at King's College Hospital, which we commented upon last week[1]—one of the series being delivered at the College on the relations of animal life to human progress, dealt in an interesting manner with the right use of national collections as centres of research. But it is a fact that while an occasional dramatic discovery by some particular member of a museum staff arrests public attention from time to time, little or no credit is given to the year-in and year-out work on which the usefulness of a museum primarily depends. It is the routine of museum labour which is well set out in the current issue of the *Museums Journal* in relation to the work of the Natural History Museum at South Kensington. It is here shown how the identification of a fossil may determine the expenditure of vast sums of money in mining or industrial operations, while the working out of an insect's life-history may save as much in actual money and human lives into the bargain. The average citizen takes some pride in the picturesque and curious exhibits set out in his national collections, and estimated to represent millions of public money, but there is little realisation of the constant labour carried on in the museum laboratories and work-rooms, with its return to the community at large in the form of health and wealth. Yet this labour forms the greatest justification for the money spent on museums. More, it would justify such expenditure in this country being many times over greater than it is. The article in the *Museums Journal* is advisedly not a complete account of the part played in military matters by museum research, but it is sufficiently enlightening. One investigation has led to the destruction of a fungus attacking Army tents in Malta, another to a great economy in the supply of sphagnum moss for surgical dressings; others have been directed towards the

[1] THE LANCET, Feb. 23rd, p. 321.

fauna and flora of the sea as sources of food and the means of increasing our supply of potash and iodine. A leading horticultural firm voices its appreciation of the work done by the museum staff at South Kensington in regard to the pests of agriculture. The Military Medical Commission in Egypt and the Wellcome Bureau at Khartoum acknowledge important help from research on the freshwater snails and bivalve shell-fish which harbour the bilharzia parasite. We hope that the public interest aroused in such matters by war conditions may continue as an intelligent appreciation of the permanent value of museums.

THE CASE OF DR. JOHN HENDERSON BELL.

WE have received from the Rev. A. G. Pentreath, D.D., rector of Adderley and formerly Senior Chaplain to the Forces in Malta, a letter urging that full publicity should be given to the case of Dr. John Henderson Bell, who is at present serving a sentence of six months' imprisonment in the second division for a supposed "act preparatory to an act" to enable a soldier to evade military service. The circumstances in which this conviction was secured have never convinced those who gave the case close attention that Dr. Bell was other than a perfectly innocent man, and we are not surprised to learn from Dr. Pentreath that some leading medical authorities, having individually examined the case from a medical point of view, regard Dr. Bell's supposed criminal behaviour as perfectly usual and proper medical routine. The evidence against Dr. Bell was given by a deserter who had left France with another man's papers, and this evidence was secured by a military police officer, who set a trap for Dr. Bell with the assistance of other people, to one of whom a sum of money was paid. There was never any evidence that Dr. Bell received improper payment for his medical treatment of the individual who laid information against him, while certain words of his which were construed as evidence of guilt can well be understood as innocent expressions. Dr. Pentreath writes that copies of a précis of the case and of a statement from the leading medical authorities referred to can be obtained by sending him a stamped and addressed envelope at Adderley Rectory, Market Drayton, Salop, and we believe that those who thus learn the details of a case which has been but briefly reported in the press, will be profoundly surprised that there has been no remission of Dr. Bell's sentence. The manner in which the evidence was procured against him does not appear to us creditable to our times, and the quality of that evidence leaves the benefit of grave doubt on Dr. Bell's side. We cannot withhold from ourselves the conviction that we have here a case of miscarriage of justice.

WE referred recently to the subject of exemption from food restrictions for patients requiring special kinds of diet, such as diabetics. The question has been before the Central Medical War Committee, and has been directly referred to Lord Rhondda. We understand that a memorandum dealing with the subject will shortly be issued from the Ministry of Food.

THE death occurred on Feb. 22nd, at Edenbridge, Kent, of Dr. James Watt Black, consulting obstetric physician to Charing Cross Hospital and at one time assistant to Professor J. Y. Simpson, of Edinburgh, whose works he edited.

THE MINISTRY OF HEALTH.

BY A. MEARNS FRASER, M.D. EDIN.,
MEDICAL OFFICER OF HEALTH, PORTSMOUTH.

THE question of a Ministry of Health is now being much discussed and, having regard to the divergent opinions that are expressed in different quarters as to the constitution of such a body, the following views, which are formulated after 21 years' experience of local sanitary administration as medical officer of health in one of the large towns of the country, may not be without value.

It is generally recognised that at the present time, under the stress of the abnormal conditions under which we are living, the complete coördination and systematisation of all health functions under one central Ministry of Health, which is, of course, the object in view, is impossible of attainment. All that can now be attempted with reasonable hope of success is to form the foundation and framework of a Ministry which shall be filled in, part by part, as expediency and opportunity shall dictate, and at this juncture the greatest possible care must be exercised to secure that the framework shall be so designed as to be capable of development into a thoroughly efficient Ministry in the future.

As to the constitution of the proposed Ministry there are, broadly speaking, two proposals before the public: one advocates the effacement of the Local Government Board and the provision in its place of an entirely new body to be composed of representatives from existing departments and from organisations and parties interested in public health; the other proposal is for the Ministry of Health to be built up on the Local Government Board, which shall have its powers extended, its personnel strengthened, and shall exercise all the health powers and duties now in the hands of other central government departments. It is not too much to say that upon the decision as to which of the above two courses is taken the future health history of the nation to a very great extent depends.

The Proposal to Establish a New Body.

The principal supporters of the proposal to establish a totally new body are the members of the National Insurance organisations, who have for some time past indicated a strong desire to secure some control over public health administration, and who have recently promoted a "Ministry of Public Health Bill" in which their views are set forth and in which provision is made for the inclusion of representatives of National Health Insurance on the Board of the proposed Ministry. Indeed, the point at issue may now be said to have resolved itself into whether the National Insurance organisations or the Local Government Board is to exercise the controlling influence over the health administration of the country.

The majority of those who have had extended experience of public health administration hold strongly that not only are there no adequate reasons for the inclusion of National Insurance representatives in a Ministry of Health, but that, as the administration of the National Insurance Act is now largely in the hands of the Approved Societies, whose interests are not exclusively those of public health, to give such representation would tend to hamper rather than advance the best health interests of the country. It is pointed out that public health administration is no part of the duty of National Health organisations, which were appointed for the purpose of providing insured persons with medical treatment and with financial assistance when incapacitated through illness. It is not admitted as a valid argument that because Insurance Committees are concerned with the health of a large proportion of the working classes they are therefore entitled to exercise control over the conditions influencing the causation of sickness and ill-health, seeing that they already possess adequate powers for the protection of their interests in Section 63 of the National Insurance Act, which enables them to cause an inquiry to be held by the Secretary of State or Local Government Board where it is alleged that excessive sickness has arisen from bad housing, insanitary conditions, and other causes.

The conviction that it would be a mistake to grant representation to National Insurance organisations in a Ministry of Health is strengthened by a perusal of the "Ministry of

Health Bill," already referred to, which affords evidence that its promoters are fundamentally wrong in their conception of the constitution of such a Ministry. This is strikingly shown in Section 2 of the Bill, which, in providing for a Board of Health "to advise the Minister of Health on all questions of health policy," &c., directs that this Board shall be composed, among others, of persons "on the ground that they *represent labour* or on the ground that they *represent the medical profession*" Now, if there is to be a Board of Health to advise the Minister of Health, the sole qualification for serving on that Board should be recognised ability in matters pertaining to public health and local government. The duty of the Ministry of Health should be to legislate for the health of the people as a whole, irrespective of particular classes or professions. To give class representation will lead to friction and lack of harmony on the Board, and, outside the Board, will excite suspicion that its action may be determined by other than purely health considerations. Indeed, if labour and the medical profession are to be represented there is no reason why capital, property owners, dairy-farmers, meat-traders, and others should not also receive recognition. It is right and expedient that in promoting legislation which may affect the interests of certain bodies, a Ministry of Health should take the opportunity of consulting such bodies, and should carefully consider any representations which may then be made, but to go beyond this and incorporate representatives of various interests in the Ministry is wrong in principle, would be disastrous in practice, and must be strenuously opposed.

Further, the inclusion of National Health Insurance representatives in a Ministry of Health gives rise to the suspicion that their influence will tend in the direction of extending the powers and duties of local Insurance Committees at the expense of local sanitary authorities. Evidence that this suspicion is based on solid grounds is afforded in Section 10 of "the Ministry of Health Bill," which proposes to establish "hospital authorities" for certain areas (not being less in any case than the county or county borough), which shall take over, among other institutions, the administration of infectious disease hospitals which are now under the control of local sanitary authorities, and these "hospital authorities" are to include representatives of Insurance Committees. The proposal that infectious disease hospitals, which have been provided out of the rates, shall be taken out of the hands of local sanitary authorities and placed under the control of another authority is open to strong criticism on at least two grounds: one, that the control of establishments provided out of the rates should not be vested in persons who are neither elected by the ratepayers nor responsible to them for their actions; the other, that the proposal, providing as it does for the establishment of another health authority in the same area, must inevitably lead to overlapping and friction, the very conditions that a Ministry of Health is required to prevent.

Lastly, the fact must not be lost sight of that local sanitary authorities, who are the principal local administrators of health legislation, and to whose views therefore considerable weight must be attached, are, generally speaking, opposed to being controlled by representatives of National Insurance organisations. It is impossible to conceive any condition more calculated to invite certain disaster than that in which a Ministry of Health is established which is constituted in direct opposition to the expressed wishes of the local sanitary authorities which it will supervise and control.

The Alternative Proposal.

The proposal to build up a Ministry of Health on the Local Government Board is open to none of the foregoing objections, and would receive the almost unanimous support of sanitary authorities throughout the country. Local authorities, with their officials, recognise, probably more clearly than others are able to, the very great services that the Local Government Board have rendered in conserving and promoting the health of the country; they have frequently been helped by the advice of the Board, they have benefited by being able to fall back on the unrivalled experience of the Board in sanitary matters, and the result of this past relationship has been to establish confidence in the Board. It is not pretended that there have never been disputes—for this would imply a state of perfection unattainable in public life. Some authorities can doubtless complain that on occasions they had not received sufficient support in endeavouring to forward certain measures; others, again, may have thought that the Board were at times trying to force them to embark on schemes the expenditure for which they felt ought not to be incurred; still more have complained of being hampered in their administration by delay on the part of the Board in giving their decision on schemes and plans submitted to them for approval. But in spite of such incidents as these it is confidently maintained that local authorities both approve of and have confidence in the Board; they appreciate, moreover, that on some occasions when they have felt aggrieved the fault has lain not with the Board, but in the fact that the Board had insufficient powers allotted to it, and that its control in certain matters was shared by other independent Government Departments.

But the arguments in favour of converting the Local Government Board into a Ministry of Health are not limited to showing there are no objections to this procedure; they are further based on the stronger ground that the Board is pre-eminently and specifically qualified for the purpose. The Local Government Board has, as a matter of fact, for years been the principal central health department for the country; not only is it the leading authority on the principles of local government, but it has acquired through its intimate relations with every sanitary authority a vast and exact knowledge of public health work of every shape and form. No matter what the subject may be, whether sewerage and drainage schemes, water-supplies, hospital construction, housing and town-planning, infantile mortality, epidemiology, or any other branch of public health science, the Board can at once produce records of all that has been effected in any of these directions in any part of the country, together with the cost, results, and special modifications in schemes that experience has shown to be advisable in different districts according to varying local conditions. There is available for reference at the Board an immense store of information on the conditions and influences affecting the health of the community probably unequalled in any other country, and, in addition, a staff of highly trained experts, experienced in every aspect of public health and with a personal knowledge of the sanitary conditions of every district in England and Wales. Unless the long acquired and invaluable health experience of the Board is to be wasted, unless the continuity of health administration is to be destroyed, and the public health service of the country thrown into confusion, it is essential that the governing principle in the formation of a Ministry of Health must be the development, and not the effacement, of the Local Government Board.

Provisions Essential to a Ministry of Health.

If only departmental and other jealousies can be overcome there should be no difficulty in promoting a short Bill in Parliament which would give us a Ministry of Health, incomplete, it is true, in so far that all the duties and powers which it will eventually exercise cannot be at present transferred to it, but one which will satisfy at any rate most of the requirements demanded of a Health Ministry, one which will forthwith effect a great advance in the health administration of the country, and one which will steadily develop along stated lines into the perfected Ministry of the future. Without entering into the details of such a Bill, it is submitted that the essentials for which it should make provision are: (*a*) the existing Local Government Board with its staff to form the central department of the Ministry; (*b*) the appointment at the head of the department of a Minister with Cabinet rank; (*c*) the appointment of a Parliamentary Secretary to the Ministry; (*d*) the appointment of a Board of Health to advise the Minister; and (*e*) the transference to the Ministry of Health of all the health powers and duties now exercised by the Local Government Board and other Government Departments.

Two of the above provisos call, perhaps, for further explanation. One is the proposed Board of Health, whose duty it will be to advise the Minister of Health. As it is intended that this board shall have, under the Minister, the direction of the general health policy of the country, it is essential that its members should be in every way qualified for so responsible a position. It will naturally be composed in part of certain leading officials from the staff of the Local

Government Board, but it should also be strengthened by additions from outside, and it cannot be too strongly insisted upon that in making these appointments the Government should be guided solely by the personal qualification of the individual for the position, and should on no account be influenced by the desire for recognition in the Ministry of party, profession, or class.

The other matter which may be further elucidated is the proposed transference of all the health powers and duties now exercised by other Government Departments. It is not suggested that this shall be effected at one stroke immediately the Ministry is established by Parliament, for such a procedure would inevitably lead to hopeless confusion both in central and local health administration. All that the Bill would effect in this direction at the outset would be the transference *en bloc* of the powers and duties of the Local Government Board, which, indeed, include the vast bulk of central health administration. With regard to the health functions now exercised by other Government Departments the Bill would make provision for their transference to the Ministry at a later stage, but in as short a time as possible The transference of some health functions, such. for example, as those of the Privy Council in respect of the Midwives Act, 1902, or the powers of the Board of Education in regard to maternity and child welfare, presents little difficulty, and could be effected almost at once. The transference, on the other hand, of other functions, such as certain duties of the Home Office in connexion with factories, the duties of the Registrar-General, and others, should be effected only after sufficient time has been afforded to complete the administrative arrangements necessitated by the change. The Bill, in a word, should be so drafted that sooner or later all departmental functions concerned with the health of the nation should be systematised, coördinated, and centralised under the one Ministry of Health.

National Health Insurance.

Of all the functions which will eventually be absorbed by the Ministry of Health none will present greater difficulties of absorption than those of the National Health Insurance. Seeing, however, that the principal duty of this organisation is (or should be) the provision of medical treatment for insured persons, it cannot be said that its work, though invaluable if efficiently carried out, is an essential part of public health administration. And seeing, further, that the National Health Insurance is a self-contained body, possessing its own machinery, and competent to manage its own affairs without extraneous assistance, there seems to be no reason, unless it is asserted that its present administration is unsatisfactory, why it should at this stage be transferred to the Ministry of Health. Indeed, this course is confronted by so many difficulties, and is further so complicated by the proposed introduction of a National Medical Service, that to forgo a Ministry of Health until a satisfactory solution of the problem be found would mean postponing a Health Ministry till the Greek Calends. All that can at present be advised in the direction of amalgamation is to provide in the Bill that the Minister of Health shall be also the Minister of the National Health Insurance, this appointment to carry with it the chairmanship of the Joint Committee of the National Health Insurance. The National Health Insurance would, however, have a separate Parliamentary Secretary. This procedure would be the means of linking up to a slight degree the National Health Insurance with the new Ministry, and would tend to facilitate further action in the direction of coördination that might be found desirable in the future.

Advantages of Proposed Ministry of Health.

It is claimed that the Ministry of Health here adumbrated is simple in construction, can without difficulty be established even at the present time, and will fulfil the general demand for the consolidation of all health functions in one central government department. It has the advantage that the dislocation of public health administration which would almost inevitably follow upon sudden radical changes is avoided; yet at the same time the constructive policy outlined will in the end more effectively accomplish the object in view than the iconoclastic measures advocated in certain quarters. Lastly, a Ministry of Health will be provided which will undoubtedly prove acceptable to the local sanitary authorities which it will have to supervise; this factor will prove of inestimable value in securing local health reforms, and will facilitate any action the Ministry may have to take in unifying local sanitary administration.

Surely, it would be folly, and at the present time unjustifiable extravagance, to embark on the experiment of setting up an entirely new Government Department, with a new staff of officials and presumably new offices, in order to form a Ministry of Health, when there already exists a central health department which only needs its powers to be extended and its personnel to be strengthened to enable it to fulfil every requirement. It is confidently submitted that if the best interests of the country are to be served, if overlapping, extravagance, and confusion are to be avoided, the only course to pursue is to construct the Ministry of Health upon the Local Government Board, which, despite the many adverse criticisms to which it has recently been subjected, is undoubtedly responsible for the pre-eminent position in public health administration which this country now enjoys.

TUBERCULOSIS.

Recommendations of London Borough Councils.

THE representatives of the London borough councils, who recently met in conference on the subject of common action in regard to the treatment of tuberculosis in the metropolis, laid down as an axiom of any possible progress that the time has arrived for the abolition of the present overlapping system by the formation of one central authority responsible for the administrative control of tuberculous persons, whether insured or uninsured. Their further recommendations may be summarised as follows:

Responsibility of recommending cases for treatment, whether institutional or not, should rest with the tuberculosis medical officer of each council who possesses intimate knowledge of each patient's physical and home conditions.

Greater attention must be paid to the treatment of advanced and incurable cases of tuberculosis for which at present inadequate provision is made. Most of these cases are in an infective state and liable to spread the disease either in their own homes or by wandering from place to place. The only provision for them at present, if insured, is in a workhouse infirmary. The segregation of advanced cases should be undertaken by each council by the provision of a suitable home free from any pauper taint.

Insufficient provision exists in London for the after-care of tuberculous persons. It is desirable for the boroughs either singly or in groups to provide colony treatment, including employment and medical supervision, for selected cases.

The period of sanatorium treatment, except for the earliest cases, should be shortened until more adequate accommodation is available, thus providing educational treatment for a larger number of patients.

Day sanatoria or open-air schools should be provided, and regarded as preventive as well as curative in function; attendance at them should not be limited to definite cases of tuberculosis.

It will be seen that these recommendations are of a far-reaching nature. They would, if carried out, make the first serious attempt to deal adequately with tuberculosis in the metropolis.

Progress of County Schemes in Ireland.

The recent annual report for the year ended March 31st, 1917, of the Local Government Board for Ireland chronicles a marked advance in the development of county schemes for the treatment of tuberculosis. Despite the unfavourable conditions resulting from the war, it was found possible to open several institutions, while others were approaching completion. At the close of the year under review schemes for combating tuberculosis were in operation in three-fourths of the counties and county boroughs. In various counties branch tuberculosis dispensaries had been opened to meet the needs of districts remote from the central dispensary, and by agreement with local voluntary associations the part-time services of their nurses had been utilised for the care of tuberculous cases. Agreements between the County Councils and the Insurance Committees in regard to the treatment of insured and exempt persons recommended for sanatorium benefit had been completed in the following areas:—

Counties.—Armagh, Cavan, Clare, Donegal, Dublin, Fermanagh, Kerry, Kildare, King's County, Leitrim, Limerick, Louth, Monaghan, Queen's County, Sligo, Tipperary (South Riding), and Waterford.
County boroughs.—Belfast, Dublin, and Waterford.

These agreements resulted in the allocation of 238 institutional beds for the accommodation of insured and exempt patients. While noting with satisfaction these evidences of progress the report laments that the still more important

question of prevention has not received the full attention which it deserves. The report runs:

> The result will, therefore, fall short of what the ratepayers have a right to expect unless further efforts are made to bring every person suffering from tuberculosis under the supervision of the tuberculosis officer.
>
> We notice that in some counties certain sums are disbursed in fees to medical attendants and on incidental expenses for patients under domiciliary treatment, and it is worthy of careful consideration whether this expenditure could not be applied to better advantage. It must be borne in mind that the prevention of tuberculosis should be the aim of a county scheme of treatment, and that if a reasonable measure of success in this direction is to be obtained, the large proportion of the cases of the disease should be brought under systematic supervision. It is also essential that means should be provided for the isolation of advanced cases; and more particularly for those living under conditions which render the taking of ordinary precautions against the spread of disease impossible. Such cases are a menace to those around them, and it is for this reason that suitable hospital accommodation is urgently required; but it must be attractive and within easy reach of the patients' homes, otherwise they will prefer to remain in their homes, however wretched these may be.

A paragraph in the report deals with the number of soldiers suffering from tuberculosis, which was larger than during any annual period since the beginning of the War. With few exceptions, county councils had recognised their responsibility for a moiety of the expense involved in the treatment of such soldiers as resided in their area before joining the Army.

American Work on the Pathology of Tuberculosis.

The *American Review of Tuberculosis* for December, 1917, contains a series of useful articles. Dr. C. W. Mills and Dr. J. T. Henderson have carried out a series of observations with a view to ascertaining whether and to what extent pulmonary tuberculosis impairs the functions of the kidneys. Using the most recent tests for kidney function, they have come to the conclusion that it remains normal or is only slightly lowered in all stages of the disease. As far as renal function is concerned, they attach little importance to traces of albumin with or without a few hyaline casts in the urine. They recommend the Mosenthal and phenol-phthalein tests in cases of pulmonary tuberculosis in which nephritis or genito-urinary tuberculosis is suspected. Another original contribution comes from the medical clinic of the Johns Hopkins Hospital, and deals with the cultivation of tubercle bacilli from the circulating blood in miliary tuberculosis. The writer, Dr. Mildred C. Clough, has obtained positive results in five cases, particulars of which are elaborately tabulated. The long bibliography printed with this article is a tribute to the amount of research which has been done on this subject. A semi-editorial article gives useful hints as to standards of diagnosis, classification, and treatment of tuberculosis in children and adults.

Sanatorium Treatment in London.

The London Insurance Committee has placed its sanatorium benefit records at the disposal of the Medical Research Committee for investigation. The results may be expected to throw much needed light on the problem of the economic treatment of tuberculosis in the metropolis.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

SUBSCRIPTIONS.

THE following subscriptions to the Fund have been received during the week ending Feb. 25th:—

	£	s.	d.		£	s.	d.
Dr. Lewis McMillan ...	1	1	0	Mr. A. Chapman	0	10	0
Mr. F. W. Gamble	2	2	0	Dr. Frederick S. Palmer	2	2	0
Dr. E. Hay	1	1	0	Mr. W. H. Quarrell ...	1	0	0
Captain W. Jenkins Oliver, R.A.M.C. ...	5	5	0	Mr. R. A. Scott	1	0	0
Dr. R. Eversbed	1	1	0	Dr. W. B. Drummond ...	1	1	0
Dr. Cautley	5	5	0	Dr. Chas. Slater	2	2	0
Dr. J. H. Ormond	1	1	0	Dr. Robert Harris	1	1	0
Dr. Black	1	1	0	Dr. James Hudson	2	2	0
Dr. C. B. Ker	1	1	0	Dr. S. Hamilton	1	1	0
				Dr. E. H. Young	2	2	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W. 1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

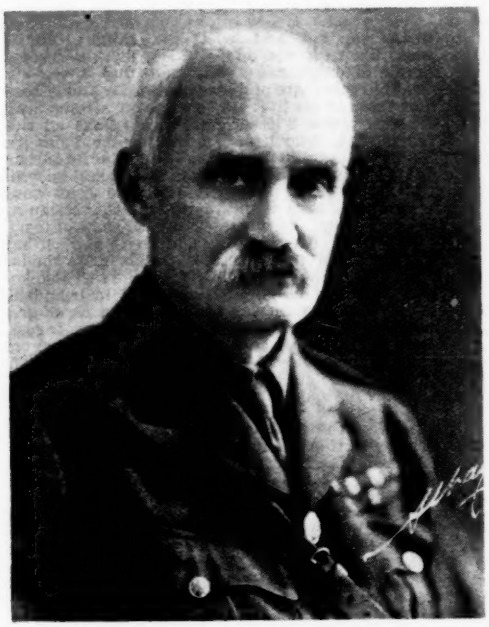
Obituary.

FLEMING MANT SANDWITH, M.D. DURH., F.R.C.P. LOND., C.M.G.,

LECTURER ON TROPICAL DISEASES AT THE LONDON SCHOOL OF TROPICAL MEDICINE AND AT ST. THOMAS'S HOSPITAL; CONSULTING PHYSICIAN, EAST MEDITERRANEAN FORCE; TEMPORARY COLONEL, R.A.M.C.

WE briefly announced last week the sudden death of Dr. F. M. Sandwith on Feb. 17th, at a convalescent home at Bournemouth.

Fleming Mant Sandwith was born at Belgaum, near Bombay, on Oct. 11th, 1853, the second son of Colonel J. W. F. Sandwith. Educated at the Charterhouse, he went on to St. Thomas's Hospital for his medical course, taking the M.R.C.S. Eng. in 1876, and later graduating in medicine at Durham, and being elected F.R.C.P. Lond. in 1900. His first professional work was of a strenuous character, for in his year of qualification he served as surgeon to the National Aid Society's Ambulance during the Turko-Serbian War, winning the Order of Takova and the war medal, and in the Russo-Turkish War of the following years he was attached to the Stafford House Ambulance and took part in Baker Pasha's famous retreat over the Rhodope Mountains. For



this he received the Order of the Medjidieh. In 1883 he went to Egypt to investigate the cholera epidemic, his work there soon leading to his appointment as Vice-Director of the Egyptian Public Health Department. At the same time he was appointed consulting physician to the Kasr el Ainy Hospital in Cairo, and from 1890 on occupied for 14 years the chair of medicine at the Cairo Medical School. The South African War found him again on active service as senior physician to the Imperial Yeomanry Hospital, when he was decorated for his distinguished services. On leaving Cairo Dr. Sandwith was appointed lecturer at the London School of Tropical Medicine, and three years later accepted a teaching appointment in tropical diseases at his old medical school of St. Thomas's Hospital, becoming examiner in the subject at the Universities of London and Liverpool and for the Conjoint Examining Board. At the time of his death he was also Gresham Professor of Physic and senior physician to the Albert Dock Hospital. In the second year of the war his experience was placed at the disposal of the troops in the Mediterranean by his appointment as consulting physician

with the rank of temporary Colonel. He also freely rendered service as chairman of the County of London Branch of the Red Cross Society.

Dr. Sandwith was an accomplished writer on medical topics. His systematic lectures to Cairo students on the medical diseases of Egypt were published in 1905 in a volume intended to form one of a series which was unfortunately never completed. This book is, like those of Pruner and Griesinger before it, a classic on the history and geographical distribution of disease in the Near East. His articles on dengue, published during 1888 in THE LANCET, threw welcome light on what was then a little-known infection and often confused with other continued fevers; while his Lettsomian lectures on dysentery, delivered in 1914, and printed in our columns, were opportune in a way which could not then have been foreseen. He also wrote a handbook upon Egypt as a winter resort which has proved an indispensable vade-mecum to a whole generation of health-seekers, and other articles of topographical interest in various journals.

Dr. Sandwith was twice married: first to Annie Christina, daughter of W. Glassford, and later to his second-cousin, Gladys, daughter of Dr. Humphry Sandwith, C.B., of Kars, who, with two sons and two daughters, survives him.

Mr. STEPHEN PAGET writes:—

There are men who surpass all their appointments and honours, and are greater than their work: and Sandwith was one of them. Not that he ever received all the honours which he deserved: for he never went on that quest. He was one of our leaders, not only by what he did and what he taught, but by what he was. There is not one of all of us who has set a better example of dutifulness, gentleness, and loving-kindness. He had his full share of disappointments and of losses in the earlier years of his life: he was not in strong health through the later years; a lesser man might have let these troubles narrow his outlook and loosen his hold on great affairs. Sandwith turned them to discipline, and they brought out that grave, delicate, quiet lovableness which was so beautiful in him. One hunts for the exact words. He had the real divine gift of simplicity: not that cheap sort of inexperienced simplicity which goes with want of insight and with acceptance of second-rate motives and off-hand judgments. He had in his life, and it was visible in the look of his face, a touch of the ascetic spirit: but he had also keen humour, and unfailing delight in home, and in friendship, and in good works. There was about him an air of great refinement. He hated self-assertion, advertisement, gossip against other men, and all conceited or irresponsible talk. He lived for what he could do to help the world, not for what the world might do to help him. Quietness—that was one of the many graces of his character: a quiet voice, a quiet manner, a quiet mind. One cannot for a moment imagine him anything but the master of his fate and the captain of his soul. And with this self-reverence went the most perfect reverence for all that was good in other men. He obeyed always the rule, "Honour all men." When he came home from Egypt a few months ago, he was full of praise of the work of the younger men out there, and said little of his own work. "There is nothing that a man cannot do, provided that he doesn't care who gets the credit for it." That was one of the secrets of Sandwith's power to bring about great improvements. For example, his work for the Red Cross. So soon as the Red Cross divisions were formed in London he became Chairman, and was indeed the very making of things. It was his work that helped to found the colossal work of the later years.

He succeeded to the traditions of his own people: the names of Colonel John William Sandwith, Colonel John Hartley Sandwith, and Dr. Humphry Sandwith, of Kars, come to be remembered here. He had deep hatred of war, yet could not bear to stay away from the service of the Army in war. There is a good story told of him in THE LANCET of Oct. 28th, 1876, how, in the Turco-Servian War, a village where he and another young Englishman were doing ambulance work was surrounded by the Bashi-Bazouks. These two very young men were just preparing to amputate a thigh. They quietly did the operation, put the patient in a cart, and followed the retreat on foot, half an hour before the village was sacked and burned; this was when Sandwith was 22. It was of good augury for his later and greater work in the South African War and the present war. But nothing is finer than the work which he did in Egypt under conditions other than those of war. He saved and recreated the Kasr el Ainy Hospital; he took charge of the new Sanitary Department of Egypt in 1884; he found the hospital gone to chaos, and worse than chaos; and what he did for it is just as memorable as Miss Nightingale's work in the Crimea. And, as he fought against cholera and typhus in the Egyptian prisons—and with his own hands knocked off the fetters of some of the prisoners—so he fought against corruptness of administration; fought wisely and with good success.

One memory, nearer home, must not be left out here, for it recalls vividly the beauty of his character. He was for several years Gresham lecturer in physic. It is a good test of a man's thoroughness. The lectures are ill-remunerated, and they are out of the way of fashionable London. It is a very special audience, keenly appreciative of a man's personality; he won their hearts; they had downright affection for him; and he gave them himself at his best. He took immense trouble over these lectures; he had them typewritten, and he illustrated them generously with diagrams and lantern slides. His lectures on Pasteur and Lister and Miss Nightingale; on tropical diseases; on military surgery and hygiene; and on subjects of national health and of heredity—these one remembers as some of the best of their kind in all London. But memory insists on what he was even more than on what he did. In one of his last letters to those outside his own circle he says: "I can honestly say that no 22 months of my life have been more useful to others than those I spent in Alexandria." He wore himself out there; happily, he came home, and for a little time was able to enjoy life here before he died. His life was "useful to others" wherever he was and always, for it was a very noble example of purity and quiet devotion to duty and to honour; and we are all of us the poorer now that we have lost him.

WILLIAM HAMERTON JALLAND, F.R.C.S. ENG.

Mr. W. H. Jalland, who died on Feb. 7th at York, where his whole professional life was spent, was a Guy's man, qualifying in 1870 and obtaining his F.R.C.S. three years later. After holding house appointments at Guy's Hospital, he settled in York, being elected in 1879 honorary surgical officer to the County Hospital, to which institution he was a good friend for nearly 40 years. For a time he was a member of the House Committee, initiating a number of improvements, especially the establishment of the children's and eye wards, and he spared neither time, trouble, nor money in furthering its interests. Mr. Jalland was an active member, and twice president of the York Medical Society, his regular attendance at its meetings proving a helpful example to younger members of the profession. He was a pioneer in the work of the St. John Ambulance Association, especially in connexion with the North Eastern Railway, and was for 17 years surgeon to the 1st Volunteer Battalion of the West Yorks Regiment, since the war being one of the consulting surgeons to the Haxby-road Military Hospital. He was a prominent citizen in York, serving on the Commission of the Peace for the North Riding and as Deputy Lieutenant for the West Riding. In 1896 he was elected Sheriff of York, and he held the dignity of Knight of Grace of the Order of St. John of Jerusalem. Mr. Jalland leaves a widow, one son, and one daughter; another son was presumed killed at Suvla Bay shortly after the landing.

A medical friend writes of Mr. Jalland:—

For many years he held the premier place as surgeon in the city of York and district. As a consultant he was in great request, for he was always helpful. The reasons for his success were his sound judgment, his conspicuous integrity, his carefulness, and his loyalty to the best traditions of his calling. He was a man of few words, and rarely spoke in public, yet when he said anything his quiet, well-chosen words carried conviction and gave confidence. Not only in medical matters, but in many other directions, he gave willing service to city institutions, for his experience and judgment were greatly valued. His death is a real loss to the city and to the medical profession, for he was truly a good practitioner and a good citizen.

THE LATE MR. R. J. H. SCOTT, F.R.C.S. EDIN.—Richard James Herbert Scott, who passed away at Clevedon on Feb. 17th at the age of 61, had been associated with the medical profession in the western spa for nearly 40 years. He was the son of the Rev. J. J. Scott, and was educated at Guy's Hospital, qualifying for the M.R.C.S.Eng. in 1879 and F.R.C.S. Edin. ten years later. He was honorary consulting surgeon to the Royal United Hospital, Bath, and honorary surgeon to the Royal Mineral Water Hospital, Bath. He was President of the Bath and Bristol branch of the British Medical Association in 1905. Since 1909 he had been a member of the Bath city council. On the council Mr. Scott rendered invaluable services as chairman of the Statutory Hospital, which was extended and improved through his efforts. Mr. Scott was a Freemason and attained Provincial rank. He leaves a widow and his two sons hold commissions in the Royal Navy.

Correspondence.

"Audi alteram partem."

GRADUATED EXERCISES IN PROGNOSIS.

To the Editor of THE LANCET.

SIR,—My article to THE LANCET of Feb. 2nd, in which I strongly urged that systems of training by graded exercises should be given a much more extended trial than hitherto, has met with a pleasing measure of support in your correspondence columns. My standpoint is that such systems, applied to invalid soldiers who are below par, have not only a remedial value, but that they have *par excellence* a value in military prognosis. I would beg those medical officers who are in charge of "D.A.H." cases, or those to whom the admission and discharge books of military hospitals are accessible, to study the *usual* length of time which these cases spend in their institutions; and many of the former officers would be enlightened by adding to this period the period of time which their patients pass in other institutions from which they have been transferred. This is a practice in which we indulge at Colchester, and, assuming that the cases which are transferred to us from other hospitals are fair samples, the conclusion is unavoidable that the usual stay of these cases in military hospitals generally is far too long. Each week large numbers of cases are admitted under us which have been for three, six, or even more months in other institutions. The patients to whom I refer have been evacuated originally from the war areas, and they are little more or little less promising than the patients whom we receive direct from the war areas. The two classes remain the same time with us, receive the same treatment, and are sorted to the classes of duty in approximately the same percentages. Naturally, we are inclined to regard the previous stay in other hospitals of cases transferred to us as so much time lost.

It is this belief which compels me to urge the wider adoption of a system which treats and finally disposes of the men in an average space of somewhat less than eight weeks. We are rapidly approaching a season of the year when, as unhappy experience has taught us, there is to be a great demand for beds. Bed accommodation is obtainable by providing new accommodation or by using the old more economically. The reasons why "D.A.H." cases are dealt with in a dilatory fashion are not entirely known to me, but I am led to believe that it is in large part due to a very natural state of indecision. The medical officer is unable to determine to his own satisfaction if the heart is really diseased, or, believing there is no disease, he is undecided as to the man's capabilities. Such indecision is the result of attempting what, in my view, is an impossible task. To gauge *the capacity of the body as a whole to endure physical strain*, by a rapid examination focussed upon one system, the circulatory system, in a class of patients where it is by no means certain that the circulatory apparatus is either primarily or chiefly at fault, is to invite disaster or to create such hesitancy as will materially reduce the efficiency of the medical work. The prime question admittedly in these men is the body's capacity for physical work; the plea is that this capacity can be gauged reliably in one way only—namely, by exercise tests.

There remains one point, raised by Dr. Poynton in your last issue—namely, the advisability or disadvisability of grouping these men in the same ward or institute. The arguments which disadvise this course are well known but may be discounted. The result depends on the atmosphere created. All our patients come to us already fully convinced that their hearts are affected. They come to an atmosphere in which this belief is consistently and constantly discouraged, an atmosphere where *progress* upon physical drills is almost constant, where progressive improvement in health and well-being is the rule, where in the initial stages of treatment a great deal can be and is done to disabuse their minds that the original diagnosis—the inevitable diagnosis, so it would seem to be, of "D.A.H." or "V.D.H."—was unjustified. Apart from the clear advantage on the investigational side there is a further and notable gain in that the medical officers in charge become by experience exceptionally efficient in the routine work of treating and of sorting; they become especially adept in recognising those who simulate or who exaggerate their symptoms. The grouping of the men in special wards, which may be thought, but is not necessarily, a part of the system, is not, to my mind, an argument against but in favour of this system's adoption. The chief argument yet remains; it is the argument based on results, which it was the endeavour of my article to bring home to your readers.

I am, Sir, yours faithfully,

THOMAS LEWIS.

Military Heart Hospital, Colchester, Feb. 16th, 1918.

To the Editor of THE LANCET.

SIR,—The D.A.H. case presents two aspects: on the one hand it is physical—that aspect is estimable in foot-pounds, so to speak, and from that point of view the case can be and should be prepared and tested on the lines of the Colchester Hospital, as advocated by Dr. Lewis; on the other hand, it is psychical—that aspect presents the case as one of nervous instability, in particular of defective emotional control, so much so that the characteristic heart disorder may be labelled the emotional heart. The case from this point of view may be *prepared* at the Colchester Hospital, but it cannot be *tested* until it reaches the firing line. For this reason it does not suffice to have reached the firing line or even to have suffered wounds or death; we require the fullest information as to how these men, presumably cured, bear themselves in the stress of war.

I am, Sir, yours faithfully,

HARRINGTON SAINSBURY.

Wimpole-street, W., Feb. 25th, 1918.

WAR PSYCHO-NEUROSIS.

To the Editor of THE LANCET.

SIR,—I have read with great interest the addresses of Lieutenant-Colonel F. W. Mott on War Psycho-Neurosis in THE LANCET of Jan. 26th and Feb. 2nd, and I feel we are indebted to him for the forcible manner in which he has brought out what seem to me the chief points in his papers—viz., the identity of war neurosis with the symptoms of the ordinary case of neurasthenia, the fact that heredity plays an all-important part, and the value of Dejerine's definition and its bearing upon causation. I think, perhaps, there is also something to be said upon another phase of these nervous conditions to which Colonel Mott has not referred. I allude to the patient's *will to recover*. This opens up the great question of exaggeration, amounting even to malingering, but with the latter—the criminal aspect—I do not propose to deal. We must recognise that, short of intentional deception, the want of will to recover may be either conscious or subconscious, and the former is perhaps not far removed from criminal intent, and, indeed, may be on the border-line, for the man who is anxious to avoid future service and is conscious of the fact that the perpetuation of his symptoms may be the means to the end, but does nothing to further his recovery, is deserving of our condemnation. Whereas, on the other hand, as all who are familiar with these cases will, I think, recognise, there operates in many a loss of hope and desire to recover, which stands in close relationship to the loss of will power, which may possibly be the central cause of their failure at the outset. They make no effort and become therefore more and more dominated by preoccupation, the presiding genius of their complaint. In the opinion of the writer, the will to recover is all-important and is intimately identified with the loss of control, which is, of course, the essence of the condition. The recognition of malingering is difficult enough in some cases, but the detection of this factor, the subconscious loss of will to recover, is more difficult still, and in our management of war psycho-neurosis it should be our first aim to discriminate between the patients who have all the desire and will to recover, but are the victims of profound inhibition, the outcome of their nervous state, and those who, without being conscious of it, give way and drift because they make no attempt to regain control by the exercise of desire and will.

I am, Sir, yours faithfully,

Newcastle-on-Tyne, Feb. 19th, 1918. DAVID DRUMMOND.

RAT-BITE FEVER.

To the Editor of THE LANCET.

SIR,—I am very interested in the account of "A Case of Rat-bite Fever," by Captain S. R Douglas, I.M.S., Captain L. Colebrook, R.A.M.C., and Lieutenant A. Fleming, R.A.M.C., in your issue of Feb. 16th. The case seems to have very closely resembled a typical one of this disease, and yet the observers found no spirochætes but a streptococcus, which they proved conclusively was the cause of the illness, and the administration of a vaccine made from this streptococcus cured the patient. It is conceivable and highly probable that a fever clinically resembling rat-bite fever might be caused by numerous different organisms; in one case a spirochæte, in another a streptothrix, and in a third a streptococcus.

Those who have followed the account of the work of the several Japanese observers in the recent numbers of the *Journal of Experimental Medicine* can have no doubt that typical rat-bite fever, as met with in Japan, has been conclusively proved to be due to a spirochæte—the *Spirochæta morsus muris* (Futaki), but its detection in the glands, excised skin of the affected part, and particularly in the peripheral blood of a patient is a matter of great difficulty.

My reason for writing is not a controversial one. I know very little about the subject from a clinical standpoint, and have only seen one definitive case, that of a lady bitten in the finger by a ferret. This was before the discovery of the Japanese had appeared. I examined in the afebrile period the blood and exudation from the wound, but with negative results. I have, however, just finished a long and very laborious work which has taken much of my time for a year. In February of last year I started to see if I could detect in the kidney of the common rat either primarily the *Sp. icterohæmorrhagiæ* of infective jaundice, or secondarily the *Sp. morsus muris* of rat-bite fever. I have completed the examination of 100 rats (*Mus decumanus*) caught in the town and country around, and I have found that 9 per cent. carry definite *Sp. icterohæmorrhagiæ*.

[Details of the methods, description of the spirochætes, with photo-micrographs at a magnification of from 2000 to 4000 diameters, showing the minute curls of the spirochæte which Noguchi was the first, and only one, to point out, and of which he says, "So far no satisfactory micro-photograph has been reproduced," are in the press and will appear shortly.] During the whole of that examination I only once met with any other spirochæte, and that was in the eighty-fourth rat, one about half-grown from the country. These resembled very closely the *Sp. morsus muris* of rat-bite fever in size, shape, and staining reaction; they were short, thick, and rigid. The average measurement of 65 examples was 5·45 μ long, with 2·2 turns or waves. These, I have little doubt, are the spirochætes of rat-bite fever described and figured by the Japanese workers, but until I have either seen their preparations or have found similar spirochætes in cases of rat-bite fever in England the question must remain *sub judice*.

This brings me to the reason of my writing.

1. Can any of your readers lend me a slide showing the Japanese spirochæte in order that I may examine and take photo-micrographs?

2. Will those who meet another case of rat-bite fever kindly send me an excised gland or smears from an excised or punctured gland and blood-films taken from the skin at the seat of the rash or wound, both only during a febrile attack?

I am, Sir, yours faithfully,

ALFRED C. COLES.

York House, Poole-road, Bournemouth, Feb. 19th, 1918.

THE CHOICE OF ANÆSTHETIC IN SEVERE INJURIES.

To the Editor of THE LANCET.

SIR,—It would be interesting to know whether surgeons and anæsthetists who are called upon to treat civilians' wounds during air raids have profited by the experience of the men at the front and insist on administering nitrous oxide and oxygen as the anæsthetic for the severely wounded. People wounded during a raid are in much the same condition as soldiers wounded at the front, and one knows that whenever it is possible gas and oxygen is selected as the anæsthetic of choice.

The reasons for this choice need not be entered into here; but it seems a pity that our civilian wounded should not be given just as good a chance of recovery as our soldiers.

I am, Sir, yours faithfully,

H. EDMUND G. BOYLE.

Upper Wimpole-street, W., Feb. 23rd, 1918.

A COMMON ORIGIN FOR SHINGLES AND CHICKEN-POX.

To the Editor of THE LANCET.

SIR,—An outbreak of chicken-pox among my own children seems to afford further support of Dr. W. P. Le Feuvre's theory, as discussed in an annotation in THE LANCET of Feb. 16th. On Oct. 8th, 1917, I went to stay with the three children in a house where the maid, with whom they spent much of their time, was suffering from an attack of herpes zoster. As far as I can remember, the distribution of the rash was that of the fourth cervical and third dorsal segments on the right side. We returned home by train on Oct. 15th; on Oct. 27th my elder boy, aged 5, showed a scanty generalised chicken-pox rash, but possibly the disease started on the 24th, as on that day he vomited several times, and on the next or following day had a raw spot on the neck which may have been a vesicle ruptured by scratching or rubbing. I know of no source of infection. The two younger children developed chicken-pox on Nov. 8th.

I am, Sir, yours faithfully,

Feb. 19th, 1918. IVY E. HASLAM.

ACRIFLAVINE AND PROFLAVINE.

To the Editor of THE LANCET.

SIR,—I wish to correct an error and to make good an omission occurring in my paper in your issue of Feb. 16th dealing with the action of these substances.

In the first series of experiments I found that staphylococci grew in defibrinated blood in the presence of 1/60,000 acriflavine. The text, as I wrote it, gave 1/160,000.

Again, in comparing the effect of the antiseptics on the growth of staphylococci in serum and broth respectively I omitted to state that the organisms grew freely in broth in the presence of (1) 1/30,000 acriflavine, (2) 1/10,000 proflavine. This was in contrast with the case of serum, where there was no obvious growth in the same concentrations.

I am, Sir, yours faithfully,

France. WM. PARRY MORGAN.

THE OLD EPSOMIAN CLUB.

To the Editor of THE LANCET.

SIR,—A meeting of the members of the Old Epsomian Club will be held at the office of Epsom College, 37, Soho-square, on Tuesday, March 5th, at 4.30 P.M. As the list of addresses is so full of errors notice of the meeting will only be given in this form. In addition to the ordinary business the meeting must decide what sum is to be given by the club to the Epsom College War Memorial Fund.

I am, Sir, yours faithfully,

37, Harley street, W., Feb. 22nd, 1918. EDRED M. CORNER.

Miss E. E. Violet Glover has been admitted to the degree of Doctor of Medicine in the University of Leeds. She is the first woman who has taken this degree in the University.

THE LATE DR. J. BARRON.—John Barron, who died on Feb. 10th, at Belfast, at the age of 57, had been in failing health for some years. He was born in County Antrim and was educated at the Royal Academical Institution, and at Queen's College, Belfast, and graduated M.D. of the Royal University of Ireland in 1885. Starting practice in Belfast, he succeeded his brother, Dr. James Barron, as dispensary doctor of No. 2 Belfast Poor-law district. Up to about four years ago he had a large practice, especially among the poor, by whom he was greatly liked, but at that time impaired health obliged him to give up his dispensary work and he has since gradually relinquished practice. He was at various times a member of the city council and of the Belfast Water Board. His wife predeceased him, and he leaves a daughter.

URBAN VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING JANUARY, 1918.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 5·0 per 1000 of the population, estimated at 4,237,387 persons; in the three preceding months the rates had been 5·3, 6·3, and 5·3 per 1000. The lowest rates in January were recorded in Kensington, Hammersmith the City of Westminster, Hamostead and Islington, and the highest rates in the City of London, Bethnal Green, Stepney, Southwark, Battersea, and Deptford. The prevalence of scarlet fever was slightly less than in the preceding month; this disease was proportionally most prevalent in Fulham, Chelsea, the City of London, Southwark, Battersea, Wandsworth, Deptford, and Greenwich. The Metropolitan Asylums Hospitals contained 1068 scarlet fever patients at the end of the month, against 1180, 1335, and 1246 at the end of the three preceding months; the weekly admissions averaged 132, against 177, 191, and 138 in the three preceding months. Diphtheria showed a small decline on the preceding month; the greatest proportional prevalence of this disease was recorded in Holborn, Bethnal Green, Stepney, Southwark, Bermondsey, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1398, 1656, and 1656 at the end of the three preceding months, numbered 1658 at the end of January; the weekly admissions averaged 199, against 206, 249, and 203 in the three preceding months. The prevalence of enteric fever was slightly less than in the preceding month; of the 40 cases notified in January, 5 belonged to Hackney, 4 to Stepney, and 3 each to St. Marylebone, St. Pancras, and Lambeth. There were 26 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 38, 36, and 32 at the end of the three preceding months; the weekly admissions averaged 4, against 3, 5, and 5 in the three preceding months. Erysipelas was proportionally most prevalent in the City of London, Shoreditch, Bethnal Green, Poplar, Camberwell, Deptford, and Woolwich. The 28 cases of puerperal fever notified during the month included 5 in Poplar, 3 in Stepney, 3 in Woolwich, and 2 each in Hammersmith, Fulham, St. Pancras, Southwark, Lambeth, and Wandsworth. Of the 29 cases of cerebro-spinal meningitis, 7 belonged to Kensington, 3 to Camberwell, and 2 each to Hammersmith, Bethnal Green, Stepney, Bermondsey, Lambeth, and Wandsworth; while the 2 cases of poliomyelitis belonged respectively to Fulham and Stepney.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending Feb. 2nd the deaths of 7887 London residents were registered, equal to an annual rate of 19·4 per 1000; in the three preceding months the rates had been 12·5, 12·5, and 16·3 per 1000. The death-rates in January ranged from 12·8 in Hampstead, 14·5 in Wandsworth, 14·7 in Woolwich, 15·0 in Lewisham, 15·8 in Battersea, and 15·9 in Greenwich, to 23·2 in Holborn, 24·4 in Chelsea, 25·8 in Bermondsey, 26·1 in Finsbury, 28·2 in Bethnal Green, and 34·0 in Shoreditch. The 7887 deaths from all causes included 675 which were referred to the principal infectious diseases; of these, 242 resulted from measles, 11 from scarlet fever, 86 from diphtheria, 235 from whooping-cough, 7 from enteric fever, and 94 from diarrhœa and enteritis among children under 2 years of age. Among the metropolitan boroughs the lowest death-rates from these diseases were recorded in Kensington, Chelsea, Stoke Newington, the City of London, and Lewisham; and the highest death-rates in Finsbury, Shoreditch, Bethnal Green, Southwark, and Bermondsey. The 242 deaths from measles were 88 above the corrected average number in the corresponding period of the five preceding years, and included 41 in Shoreditch, 41 in Bethnal Green, 36 in Islington, 23 in Finsbury, 23 in Stepney, 17 in Southwark, 14 in Lambeth, and 11 in Poplar. The 11 deaths from scarlet fever were 12 below the corrected average number, and included 2 in Islington. The 86 fatal cases of diphtheria exceeded the corrected average number by 21; the greatest proportional mortality from this disease occurred in Shoreditch, Stepney, Lambeth, Battersea, Wandsworth, Greenwich, and Woolwich. Whooping-cough showed, as in the preceding month, a very marked excess over the average, the deaths from this disease numbering 235, against a corrected average of 77; this disease was proportionally most fatal in St. Pancras, Shoreditch, Bethnal Green, Southwark, Bermondsey, and Deptford. The 7 deaths from enteric fever were 8 below the corrected average, and included 2 in Lambeth, and 1 each in St. Pancras, Hackney, Stepney, Camberwell, and Lewisham. The 94 deaths from diarrhœa and enteritis were 4 below the corrected average; the greatest proportional mortality from this cause was recorded in Paddington, St. Marylebone, Hampstead, Holborn, Shoreditch, and Camberwell. In conclusion, it may be stated that the aggregate mortality in London in January from these principal infectious diseases was 56 per cent. above the average.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1918.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1918.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.								Deaths from all causes.	Death-rate per 1000 living.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years)	Total.	Annual rate per 1000 persons living.		
LONDON	4,237,387	—	674	990	—	40	—	28	271	29	2	2034	5·0	—	242	11	86	235	7	94	675	1·7	7887	19·4
West Districts:																								
Paddington	130,668	—	12	34	—	2	—	—	8	—	—	56	4·6	—	1	—	3	2	—	5	11	0·9	242	19·3
Kensington	152,144	—	11	16	—	1	—	—	5	7	—	40	2·7	—	1	1	1	1	—	5	9	0·6	254	17·4
Hammersmith	117,965	—	18	8	—	1	—	2	5	2	—	36	3·2	—	5	1	3	2	—	2	13	1·1	198	17·5
Fulham	149,428	—	31	21	—	2	—	2	3	—	1	60	4·2	—	1	—	3	8	—	4	16	1·1	231	16·1
Chelsea	57,298	—	15	7	—	—	—	—	1	—	—	23	4·2	—	1	—	—	—	—	1	2	0·4	134	23·4
City of Westminster	132,853	—	11	22	—	1	—	—	1	—	—	35	2·7	—	—	—	1	9	—	1	11	0·9	221	17·3
North Districts:																								
St. Marylebone	98,573	—	7	26	—	3	—	1	6	—	—	43	4·5	—	1	—	1	2	—	4	8	0·8	167	17·7
Hampstead	81,470	—	12	15	—	1	—	—	2	—	—	30	3·8	—	—	—	—	2	—	4	6	0·8	100	12·8
St. Pancras	196,812	—	35	32	—	3	—	2	12	1	—	85	4·5	—	5	—	3	18	1	3	30	1·6	381	20·2
Islington	309,359	—	42	57	—	1	—	1	21	1	—	123	4·1	—	36	2	5	14	—	4	61	2·1	644	21·7
Stoke Newington	49,776	—	6	11	—	1	—	—	2	—	—	20	4·2	—	1	—	—	—	—	—	1	0·2	89	18·9
Hackney	209,636	—	39	47	—	5	—	—	13	—	—	104	5·2	—	8	1	3	6	1	5	24	1·2	379	18·9
Central Districts:																								
Holborn	38,161	—	2	14	—	—	—	—	3	—	—	19	5·2	—	2	—	—	2	—	2	6	1·6	85	23·2
Finsbury	74,230	—	9	8	—	—	—	1	2	—	—	30	4·2	—	23	—	1	3	—	1	28	3·9	186	26·1
City of London	20,113	—	18	4	—	—	—	—	2	—	—	14	7·3	—	1	—	—	—	—	—	1	0·5	37	19·2
East Districts:																								
Shoreditch	99,932	—	11	28	—	—	—	—	13	—	—	52	5·4	—	41	—	4	13	—	7	65	6·8	326	34·0
Bethnal Green	115,552	—	11	38	—	2	—	—	13	2	—	66	6·0	—	41	1	2	28	—	2	74	6·7	312	28·2
Stepney	238,395	—	41	91	—	4	—	3	17	2	1	159	6·4	—	23	1	9	14	1	4	52	2·1	538	21·7
Poplar	155,095	—	19	33	—	2	—	5	16	—	—	75	5·0	—	11	1	2	10	—	2	26	1·7	293	19·7
South Districts:																								
Southwark	177,166	—	39	58	—	—	—	2	11	1	—	111	6·5	—	17	—	4	19	—	3	43	2·5	363	21·4
Bermondsey	113,661	—	18	34	—	1	—	—	2	2	—	57	5·2	—	—	—	2	21	—	3	26	2·4	281	25·8
Lambeth	283,729	—	41	68	—	3	—	2	18	2	—	134	4·9	—	14	—	9	12	2	5	42	1·5	554	20·4
Battersea	159,402	—	48	39	—	2	—	—	15	1	—	105	6·9	—	—	—	6	8	—	4	18	1·2	241	15·8
Wandsworth	310,858	—	71	75	—	2	—	2	17	2	—	169	5·7	—	4	1	10	4	—	5	24	0·8	431	14·5
Camberwell	249,749	—	33	61	—	1	—	—	25	3	—	123	5·1	—	3	—	4	14	1	12	34	1·4	411	17·2
Deptford	107,696	—	23	29	—	1	—	—	11	1	—	65	6·3	—	—	1	—	13	—	—	14	1·4	226	21·9
Greenwich	94,452	—	20	26	—	1	—	1	4	1	—	53	5·9	—	1	—	3	1	—	3	8	0·9	144	15·9
Lewisham	162,901	—	27	39	—	—	—	1	10	—	—	77	4·9	—	—	—	2	5	1	3	11	0·7	235	15·0
Woolwich	130,313	—	14	39	—	—	—	3	13	1	—	70	5·6	—	1	1	5	4	—	—	11	0·9	184	14·7
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

WE note with satisfaction the appointment of Professor E. H. Starling as educational director of the Economy Section at the Ministry of Food.

THE late Miss Helen Martin Murray left a bequest, estimated at £60,000, to found a home near Edinburgh for wounded and invalided sailors and soldiers. After the war the home will be used as a convalescent institution in connexion with the Royal Infirmary, Edinburgh.

The War.

THE CASUALTY LIST.

THE following medical officers appear among the casualties announced since our last issue:—

Killed.

Surg. Prob. D. J. Whitton, R.N.V.R.

Died.

Capt. P. H. Delamere, R.A.M.C., qualified in Ireland in 1882, and was for some years in the Colonial Medical Service, latterly in British Guiana. He died at the Military Hospital, Milton, Portsmouth.

Major W. Ap S. J. Graham, R.A.M.C., was a student at St. Mary's Hospital, London, and qualified in 1888. He joined the Army Medical Service a few years later, and was engaged in the Ministry of National Service at the time of his death.

Wounded.

Lieut. P. A. O'Brien, R.A.M.C., attached London Regiment.

CASUALTIES AMONG THE SONS OF MEDICAL MEN.

The following additional casualty among the sons of medical men is reported:—

Lieut. J. B. Harold, R.F.A., attached R.F.C., died of wounds received in aerial combat, eldest son of the late Dr. J. Harold, of Harley-street, London.

THE HONOURS LIST.

The following award is announced:—

Distinguished Service Cross.

Surgeon A. F. R. Wollaston, R.N.

For conspicuous devotion to duty and for his unfailing care of the sick and wounded during military operations in East Africa. During the operations in the Rufigi River Delta he voluntarily attended to the casualties of the Rufigi River transport service in addition to those of his own unit.

MEDICAL PRISONERS OF WAR.

The following medical officers, all belonging to the Royal Army Medical Corps except where otherwise stated, who were prisoners of war in Germany, have arrived in Holland for transfer to England:—

Capt. K. Atkin, attached South Staffordshire Regiment; Capt. R. T. Bruce; Capt. H. D. Clementi-Smith; Capt. C. F. Dillon-Kelly; Capt. F. W. Fawssett; Capt. W. R. W. Haight, Canadian A.M.C.; Capt. E. D. F. Hayes, attached Northampton Regiment; Capt. V. D. O. Logan; Capt. E. L. F. Nash; Capt. F. S. Park, Canadian A.M.C.; Lieut.-Col. H. C. D. Rankin; Capt. F. B. Ryan; Lieut. T. F. Ryan; Capt. H. K. Ward, M.C., attached King's Royal Rifle Corps; Lieut.-Col. G. S. Williamson; Capt. C. R. Wills, attached Rifle Brigade.

MILITARY AND CIVIL AMBULANCE WORK.

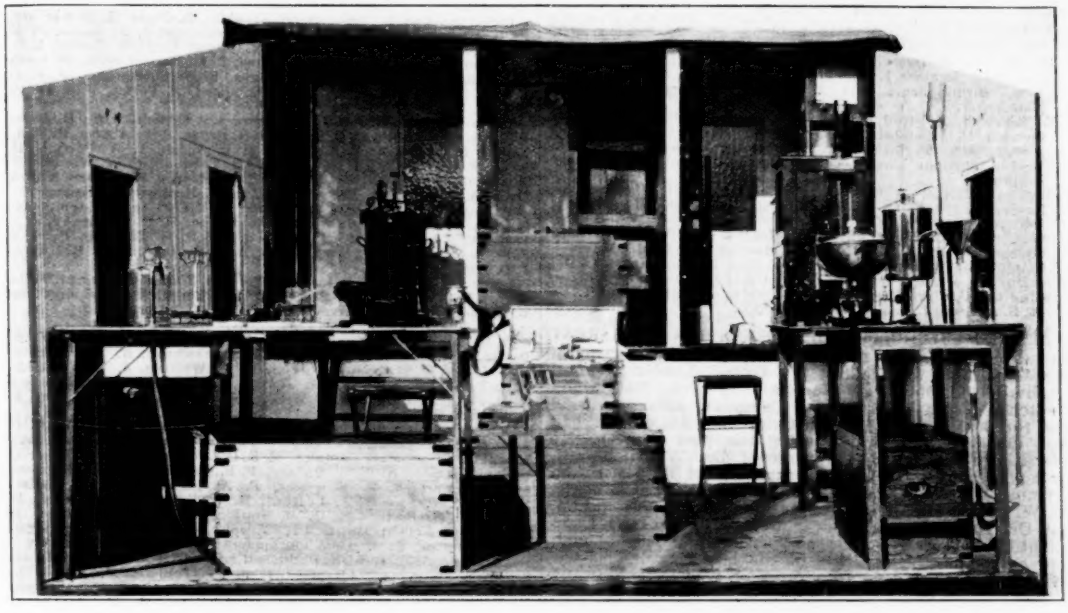
At a meeting of the Medical Society of London held on Feb. 25th, the President, Sir StClair Thomson, in the chair, Sir James Cantlie read a paper on this subject which put ambulance work in its right light. For the purpose of his paper he defined the term ambulance as the moving of injured persons as speedily as possible, either from the battle front to the base, or from the factory, the harvest field, or the street to the hospital. In military ambulance work the injured man was moved, he said, by bearers trained by the medical department of the Army in time of peace; in civil life the training of the bearers was left to members of the medical profession under civil ambulance bodies directed by laymen. The principles involved in these two branches of ambulance work as regards training were different. In military work the medical department trained the men under its control, sent out its emissaries to collect the wounded and bring them in; but in civil life surgeons and physicians stayed within their hospitals and waited for the injured to be brought there to them, but took no responsibility and exercised no control as to the state in which the injured were brought to them. This was an essential and basal difference. Our universities and medical schools took no part in the training or teaching of first-aid bearers or ambulance workers, but left it to be done by bodies outside their influence and supervision. First-aid, as now known, was a special branch of the surgical art, and those of the profession who wished to take it up had to go beyond their schools to acquire the knowledge necessary in either the practice or the teaching of the art. As a profession we shut our eyes to the condition of the wounded in the streets, and took no care, for instance, to prevent the simple fracture from becoming compound and septic. In 1881, at the Medical Congress in London, a demonstration of ambulance work was watched by Professor Esmarch, and on his return he called the population of Kiel to the University to be taught first aid. Britain was the originator of civil ambulance work and had taught the world its meaning and purpose, yet the medical profession, as a profession, had taken no part in it, nor was there any great ambulance school. He wanted the foremost surgeons, physicians, and teachers, with the best appliances, to take the matter in hand, for first-aid, as it ought to be taught, was not in the stage of the little knowledge which is a dangerous thing; it was a definite part of medicine and was complete in its limitations and its purpose. It was as distinct a department of surgery as, say, ophthalmology or dentistry. The welfare, the very life, of the injured was being dealt with by a section of the community whose business was neither surgery nor medicine. Yet they were expected to carry on this important work apart from the control of those to whom the nation looked for direction in all matters of the healing art. It was to remove this stigma that he had for many years in his mind the formation of a central institute where this great branch of professional work should be suitably housed, where its teaching should assume a technical, if not a scientific, perfection. It was for this purpose that the College of Ambulance was founded in 1914. The College had fulfilled its purpose, inasmuch as it provided a central institute where all branches were taught, where models of all organs were to be found, and where drill-room, ward, and operating-theatre, &c., were at hand.

Mr. Hugh Lett, Mr. Edmund Ridsdale, Mr. Frank Hastings, and others took part in an interesting debate, which demonstrated that the standardisation of first-aid work is now very necessary.

BRITISH RED CROSS FINANCE.—The third annual report of the British Red Cross Society and the Order of St. John of Jerusalem, dealing with the year which ended on Oct. 20th, 1917, shows that while the administration and management of the Red Cross work at home and abroad involved no direct charge upon the funds subscribed by the public for the benefit of the sick and wounded, the annual income of the society has for the first time since the war began shown a deficiency as compared with the expenditure. The income was £3,474,563 1*s.* 1½*d* and the expenditure £3 672 355 12*s.* 2½*d.*, leaving a deficit of £197,792 11*s.* 1*d.* An adequate idea of the work done can be obtained only by reading the complete report, but it may be pointed out that £1,036.245 was spent on the provision of medical and hospi al supplies, apparatus, comforts, and clothing. The motor ambulance service cost £295,675, as against £371,816 in 1916; purchases of ambulances and cars were naturally fewer in view of the great fleet of 2463 in actual use abroad and at home; while inquiries for wounded and missing men, which in France alone cost £5275 last year, involved 79,272 inquiries and 112,268 reports made. Of these, 11,922 inquiries and 59.502 reports were made in France and Belgium. Netley Red Cross Hospital has now been increased to 1008 beds, 37 for officers, and the daily cost of each patient, including officers, is 6*s.* 5.53*d.* The Red Cross War Library, which sends books and magazines to hospitals and medical units everywhere at home and abroad, now costs £2500 a month. Dealing with the present and prospective position of the Red Cross funds the Finance Committee say:—

At the time of writing this report we are experiencing for the second time considerable anxiety as to the sufficiency of funds to carry on our work. ..... Although over £2,000,000 were raised on "Our Day," 1917, out distancing by hundreds of thousands of pounds the collections of previous "Our Days," the normal daily subscriptions have greatly decreased, and the net balances on our funds on Jan. 18th, 1918, were £2,466,000. The estimates of expenditure to the end of the current financial year, without allowing for special grants or the inevitable development of certain branches of our work, amount to £2,600,000. As the inflow of subscriptions may be expected to cease immediately peace is declared, although hospitals, convalescent homes, and kindred institutions will have to be maintained for a much longer period, large balances must be kept in hand, not merely for these purposes, but to meet the cost of demobilisation. ..... For some time past we have been reluctant to embark on new schemes involving any large expenditure, but we should feel the keenest regret if we had seriously to cut down our present expenditure when considering the departmental estimates for the second half of the current year.

The report and accounts can be obtained at the price of 1*s.* from Room 70, 83, Pall Mall, London, S.W. 1.



A MOTOR BACTERIOLOGICAL LABORATORY.

Mr. Henry S. Wellcome, founder of the Wellcome Bureau of Scientific Research, has presented to the War Office for the use of the Army Medical Department a motor bacteriological laboratory with complete equipment. The body of the car and its extended weatherproof annexe form a self-contained laboratory, affording a total working space of 219 square feet. The bacteriological equipment is contained in 13 strongly made canteens, so arranged that the contents are easily accessible but securely safeguarded against damage under rough conditions of transport. A water-tank fitted with a pump is erected on the roof of the car, and all the fittings can be assembled or packed on the accompanying 3-ton chassis in about two hours. Our illustration gives a general view of the interior of the annexe after removal of the end. In it may be seen the hot chambers, Pasteur oven, microtome, ice-chest, electric-lighting outfit, and provision for animal cages on the roof.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of Comitia of the Royal College of Physicians on Jan. 31st and of the Council of the Royal College of Surgeons on Feb. 14th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following candidates (including eight ladies) who have passed the requisite examinations and have complied with the by-laws:—

Gerald Victor Wright Anderson, Bristol University and University College Hospital; Mary Andrews, Sheffield University; Herbert Claude Apperly, Middlesex Hospital; Charles Walter Wylde Armstrong, Guy's Hospital; Keith Edward Attenborough, St. Mary's Hospital; Loveday Shackell Banes, Royal Free and St. Mary's Hospitals; Montv Baranov, University College Hospital; Edgar Richard Batho, St. Mary's and St. Bartholomew's Hospitals; Charles Clement Benev, London Hospital; Percival Frederick Bishop, Cambridge University and St. Thomas's Hospital; John Churchill Blake, University College Hospital; Jules Samuel Boruchowitz, Brussels and University College Hospital; Reginald Bertram Britton, Bristol University; Hugh Stanford Bryan, London Hospital; Francis Caldecott, Guy's Hospital; Gordon Thomas Calthrop, Cambridge University and London Hospital; John D'Arcy Champney, Bristol University; Henry Alexis Chodak, Edinburgh and St. Andrews Universities and London Hospital; Wilfred Bayley Christopherson, St. Bartholomew's Hospital; Archibald Edmund Clark-Kennedy, Cambridge University and London Hospital; Charles Benjamin Cohen, Cambridge University and St. Thomas's Hospital; William Collins, Sheffield University; Roy Neville Craig, Durham University and Guy's Hospital; Thomas Lionel Crawhall, Cambridge and Durham Universities; Henry Thomas Cubbon, Cambridge University and St. Thomas's Hospital; Jatindra Kumar Datta, Calcutta Medical College; Charles Depla, Louvain and University College Hospital; Austin Roland Doyle, Bombay University and Guy's Hospital; Francis Bridger Dutton, Oxford University and St. Toomas's Hospital; Francis Norman Victor Dyer, Cambridge University and St. Thomas's Hospital; Abdel Aziz Hassan El Zeneiny, Cairo and London Hospital; William Feldman, University College Hospital; Armin Frank Maximilian Fuoss, Birmingham University; Geoffrey Herbert Gidlow-Jackson, Cambridge University and London Hospital; Eryl Glynne, Royal Free Hospital; William Noel Goldschmidt, Cambridge University and University College Hospital; Walter Henry Grace, Guy's Hospital; Ronald Benjamin Green, University College Hospital; William Stovell Gross, Cambridge University and St. George's Hospital; William Margetson Heald, Cambridge University and St. Bartholomew's Hospital; John Martin Higginton, Cambridge University and St. Thomas's Hospital; Edward Arthur Holmes, King's College Hospital; John Hope, Manchester University; Henry Beecher Jackson, Cambridge University and St. Bartholomew's Hospital; William Anthony Jolliffe, St. Bartholomew's Hospital; David Morris Jones, Cardiff and London Hospital; Jeffrey Woodward Jones, Cardiff and Middlesex Hospital; Myrddin Emrys Jones, St. Thomas's Hospital; *Thomas Pomfret Kilner, Manchester University; Daulat Manghirmal Lala, Bombay University and King's College Hospital; Francis William Mason Lamb, Birmingham University; John Gunson Lawn, Cambridge University and St. Thomas's Hospital; Marguerite Frances Jane Lowenfeld, Royal Free Hospital; Gerald Esmond MacAlevey, St. Mary's Hospital; Henry Marie Alphonse Menage, St. Bartholomew's Hospital; Daisy Kathleen Fairbairn Michael, Madras University and Charing Cross Hospital; Harry Millett, Guy's Hospital; Ludlow Murcott Moody, King's College Hospital; David Miller Muir, Cambridge University and St. Bartholomew's Hospital; Annie Shortridge Mules, Royal Free Hospital; Philip Morgan Neighbour, Cambridge University and St George's Hospital; Vijaya Shankar Rao Pandit, Bombay University and St. Bartholomew's Hospital; Edmund Jacobsz Papenfus, St. Thomas's Hospital; Arthur Llewelyn Spencer Payne, Guy's Hospital; Thomas Melville Payne, Cardiff and St. Bartholomew's Hospital; Arthur Vernon Pegge, Cambridge University and St. Bartholomew's Hospital; Alfred Peine, Birmingham University; Sybil Madeline Georgina Pratt and Joyce Baron Reed, Royal Free Hospital; Hugh Thornton Rymer, King's College Hospital; Henry Mearns Savery, Middlesex Hospital; Cedric Kennedy Scales, King's College Hospital; George Augustus Shelmerdine Shacklock, Guy's Hospital; Bryan Buckley Sharp, St. Bartholomew's Hospital; Arthur George Shurlock, Cambridge University and St. Bartholomew's Hospital; George Harold Sims, St. Thomas's Hospital; Alfred Robert Tothill, Charing Cross Hospital; James Thomas Wall, McGill University; Arthur Stewart Westmorland, St. Mary's Hospital; Eugene Wolff, University College Hospital; and Franklin Garrett Wood, Cambridge University and St. Tnomas's Hospital.

* Diploma of M.R.C.S. conferred on Dec. 13th last.

Diplomas in Public Health were conferred upon the following candidates:—

Norah Beaumont, Royal Free Hospital and University College; and George Ernest Brand, Aberdeen University and University College.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery. D. A. Dyer (Section I.), St. George's Hospital; M. J. Panthaky (Sections I. and II.), King's College Hospital; C. E. Rice, Birmingham; and J. Remers (Sections I. and II.), Manchester.

Medicine.—O. Halstead (Section I.), Guy's Hospital; E. A. Leak (Section II.), Cambridge and London Hospital; C. E. Rice, Birmingham; T. T. Tiplady (Section I.), Durham; and J. L. Walker (Sections I. and II.), Glasgow and University College Hospital.

Forensic Medicine.—A. E. Collie, Middlesex Hospital; R. E. Jenkins, London Hospital; C. E. Rice, Birmingham; and T. T. Tiplady, Durham.

Midwifery.—I. De Wardt, Royal Free Hospital; M. Girgis, University College Hospital; T. A. Jordan, Manchester; G. L. Mitchell, Glasgow and Birmingham; and C. E. Rice, Birmingham.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: I. De Wardt, E. A. Leak, J. Remers, and C. E. Rice.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The ordinary quarterly meeting of this Association was held at the Fourth London General Hospital (the Maudsley Hospital) on Feb. 21st, when Lieutenant-Colonel David G. Thomson, presiding, said that the deaths among members of the Association had been unusually numerous during the past quarter. He referred in detail to the work of Dr. W. J. Seward, for many years medical superintendent of Colney Hatch Asylum, Dr. W. G. Ellis, of the Straits Settlements, Dr. W. Julius Mickle, a past-president of the Association, and Dr. Henry Maudsley. Sir George Savage and Lieutenant-Colonel F. W. Mott also spoke in terms of high appreciation of the qualities of the late Dr. Maudsley.—Colonel Mott then gave an address on War Psychoses and Psychoneuroses, aided by a number of microscopic preparations. He said there were two conditions in connexion with shell shock, and in the old days when a soldier came into hospital, and we had to learn from him what happened, it was all "shell shock." But since the use of the new Army form one knew whether the man was blown up or not. He had often had his suspicions that many of the cases were "shell-shy." Only those were cases of true shell shock which were blown up and lost consciousness, and there was evidence of a condition having arisen which might produce organic change. In commotional shock there was always the likelihood of associated emotional shock, and it was most important to ascertain and carefully weigh the make-up of the individual as to whether he was of psychopathic temperament. Much depended on whether the soldier was in a closed space or in the open when the shell exploded: in the latter case the subsequent symptoms were more likely to be due to emotion than to commotion, for there was not, in this case, the effect of the very forcible repercussion operative in a confined space. The remainder of the address dealt with the methods of differentiation employed, and the suggestive and other methods of treatment, as well as the minute cerebral and other changes found in brain and spinal cord of fatal cases. Professor Marinesco, of Bucharest, demonstrated a series of microscopic slides, and Colonel Mott afterwards showed members and visitors round the hospital.

THE SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

To be temporary Surgeons: H. Millett, A. L. Spencer-Payne, W. Collins, T. C. Brentnall.

ARMY MEDICAL SERVICE.

Colonels to be Surgeon-Generals: F. R. Newland, C.M.G.; J. J. Russell, C.B.

Temp. Lieut.-Col. Sir R. Ross, K.C.B. (Lieut.-Col. R.A.M.C., T.F., Major, ret., I.M.S.), to be temporary Colonel.

TERRITORIAL FORCE.

Lieut.-Col. W. R. Matthews, D.S.O., Field Ambulance, to be Assistant Director of Medical Service and to be temporary Colonel while so employed.

Major (temp. Lieut.-Col.) D. Rorie, D.S.O., Field Ambulance, to be Assistant Director of Medical Service, and to be temporary Colonel while so employed.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. B. F. Wingate, D.S.O., to be Temporary Colonel whilst employed as Assistant Director of Medical Services of a Division.

Major (acting Lieut.-Col.) Norman E. Dunkerton relinquishes his acting rank on reposting.

Major Henry A. Bransbury, D.S.O., to be acting Lieutenant-Colonel whilst in command of a Medical Unit.

R. L. Joynt to be temporary Lieutenant-Colonel.

Major F. R. Lucas, R. Scots (T.F.), to be temporary Major.

Temp. Capt. A. B. Chapman, M.C. (Canadian A.M.C.), to be temporary Major.

Lieutenants (temporary Captains) to be Captains: A. E. A. Galvin, S. C. Spencer, W. G. Rudolf.

A. C. Turner and I. Alluan, late temporary Captains, are granted the honorary rank of Captain.

S. McC. Boyd to be temporary honorary Captain whilst serving with British Red Cross Society in France.

Lieutenants to be Captains: H. Franklin, D. Clyde, H. D. Gardner, R. B. Hickson, R. T. Lewis, C. V. Braimbridge, J. R. Banks, P. R. Riggall, G. E. L. Simmons, G. Day, R. Moser, H. St. H. Vertue, M.C., C. J. Penny, R. R. Traill, O. Williams, L. G. Blackmore, R. W. Lush, E. Parker, R. O. Goldsmith, W. Agar, F. N. Sidebotham, J. F. C. Braine, G. W. Heckels, J. E. E. de Robillard, F. Portas, V. R. Smith, F. C. A. Frith.

Temporary Lieutenants to be temporary Captains: C. E. Jones-Phillipson, G. A. Mavor, C. Speers, J. S. Bellas, T. A. Adams, P. W. L. Camps, R. L. Rea, W. F. H. Ives, T. H. Campbell, T. W. Parry, J. H. Swan, E. G. Y. Thom, J. G. Elder, A. D. Turnbull, C. W. Windsor, G. Heathcote, A. McK. Niven, G. P. Barff, M. Hooper, W. H. Cam, K. J. A. Davis, A. Dewar, E. A. Bernard, J. N. G. W. McMorris, N. Garrard.

Temporary Lieutenants (Canadian A.M.C.) to be temporary Captains: E. M. Blair, E. Craig, A. W. Brodie, H. P. Swancesky, T. E. Perez, A. S. Lamb, L. M. Matthews, C. H. P. G. Benning, F. N. K. Falls, B. Cahanna, H. L. Warshawsky, A. P. Murtagh, W. F. McI. Isaac, J. D. Moore.

To be temporary Captains: L. R. Cole (Canadian Army Dental Corps), B. M. Bennett, F. Barnes, P. J. O'Reilly, M.C., F. L. Collie, V. E. Sorapure, J. W. Harvey, H. J. Burke, C. Butler.

J. W. C. Fairweather to be Lieutenant.

To be temporary Lieutenants: T. M. O'Donnell, H. Topham, W. W. Pearse, G. Marshall, A. B. Rosher, F. O. Stedman, R. H. Paramore, H. S. Lister, G. Stanger, A. N. Fell, E. W. Whiting, J. H. Whiteside, H. L. Taylor, F. Robinson, A. J. Watt, A. Ashkenny, E. Magoveny, A. H. Firth, A. Welply, G. R. Wilson, G. A. Ticehurst, N. Lavers, H. Holt, G. R. Bickerstaff.

Officers relinquishing their commissions:—Temp. Major W. C. G. Ashdowne (on ceasing to be employed at the County of Middlesex War Hospital). Temporary Captains: R. H. C. Lyons (granted the honorary rank of Captain), A. W. G. Murray, P. B. Harrison, P. W. Brigstoke, C. R. Stewart, R. E. Sedgwick, P. A. Reckless, M. H. Laslett, D. Heron, W. Speedy, F. J. Hunt, H. W. Kaye, E. S. Dixon, F. W. Craig, W. G. Porter, B. G. B. Starkie, R. Younger (granted the honorary rank of Captain), G. T. L. Murphy, E. P. Evans, P. McDougall, G. A. Renwick, B. B. Ham (on appointment under the Ministry of National Service), J. L. R. Philip (on transfer to the Indian Medical Service). Temporary Lieutenants: A. W. Hall (on account of ill-health), H. Goodman (on account of ill-health), R. G. Cunningham, J. D. Gray, J. D. Walker, R. A. Hosegood, A. B. MacCarthy, W. Hibbert, C. B. Simpson, P. W. Ashmore, J. Reid, W. Hartland, T. W. Arnison, J. C. Henderson, M. Crowley.

SPECIAL RESERVE OF OFFICERS.

Capt. W. J. S. Ingram relinquishes his commission on appointment to Indian Medical Service.

To be Lieutenants: H. Roger (from Aberdeen University Contingent, O.T.C.); C. F. Rainer, A. Blackstock, and L. C. Gument (from University of London Contingent, O.T.C.); W. R. Le Gros Clark and A. W. Wells (from University of London Contingent, O.T.C.); and A. Bulleid.

TERRITORIAL FORCE RESERVE.

Capt. J. P. Elias, from Sanitary Company, to be Captain.

TERRITORIAL FORCE.

Major (temp. Lieut.-Col.) D. Rorie, D.S.O., is seconded while holding an appointment as Assistant Director of Medical Services.

Lieut.-Col. W. R. Matthews, D.S.O., is seconded while holding an appointment as Assistant Director of Medical Services.

Major (acting Lieut.-Col.) F. A. Barron relinquishes his acting rank on ceasing to command a Field Ambulance.

Capt. J. Miller to be acting Lieutenant-Colonel while commanding a Field Ambulance.

Capt. (Brevet-Major) R. C. Dun to be acting Lieutenant-Colonel while commanding a Casualty Clearing Station.

Major H. Walker is restored to the establishment.

Capt. (acting Lieut.-Col.) A. C. Wallace relinquishes his acting rank on ceasing to command a Field Ambulance.

T. P. Tatham, from O.T.C., to be Lieutenant.

Capt. R. Sanderson is seconded for duty with a General Hospital.

Capts. R. A. Fleming and W. J. S. Blythell are restored to the establishment.

Lieut. S. J. Moore (late R.A.M.C.) to be temporary Captain, City of Glasgow Medical Volunteer Corps.

Capt. G. R. F. Sitwell (late R.A.M.C.) to be Adjutant and temporary Captain, Kent Medical Volunteer Corps.

Arthur Payne to be temporary Lieutenant, Northumberland Medical Volunteer Corps.

Medical Officer and Temp. Lieut. J. M. Ferguson to be temporary Captain, 1/11th Battalion Lancashire Volunteer Regiment.

Medical Officer and Temp. Lieut. Thomas John to be temporary Captain, 3rd Battalion Glamorganshire Volunteer Regiment.

R. H. G. Grimbly to be temporary Major, Devonshire Medical Volunteer Corps.

G. H. Johnson and J. R. Hatfield to be temporary Captains, Devonshire Medical Volunteer Corps.

Capt. J. Lindsay (late R.A.M.C.) to be temporary Major, City of Glasgow Medical Volunteer Corps.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the January issue of this journal Captain J. A. Glover describes a cerebro-spinal fever epidemic at "X" Depôt, 1917, and Lieutenant-Colonel M. H. Gordon, C.M.G., has an article on the identification of the meningococcus, in which he comes to the conclusion that a severe practical trial of the agglutination test during the past two years on a scale that is without precedent in this country has demonstrated beyond all reasonable doubt that this method constitutes at the present time by far the most valuable of all known methods of identifying the meningococcus. A Blood Change in Gas Poisoning, by Captain J. Miller, continues the investigations on this subject described in THE LANCET of Jan. 6th, 1917, by the author in conjunction with Captain Harry Rainy. Major R. Eager, though laying no claim to anything original, reviews the psychological aspect of an army and an unorganised crowd in an interesting résumé on the subject. A report upon the bacteriological examination of 1000 soldiers convalescent from diseases of the dysentery and enteric groups, by Captain William Fletcher, is continued, and there is a further instalment of Colonel R. H. Firth's Musings of an Idle Man.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 20TH.

Recruits and Tuberculosis.

Mr. BECK (Parliamentary Secretary to the Ministry of National Service), answering Major D. DAVIES, said: The practice of National Service Medical Boards as regards cases of pulmonary tuberculosis is described in N.S.I. 18 of 1917, which has already been laid on the table and effectively provides against the recruitment of men suffering from this disease. Rejections of such men are absolute and do not entail any obligation to engage in any form of work.

Major DAVIES: Is the certificate supplied by the medical officer of health or the tuberculosis officer regarded as sufficient evidence by the boards for the purposes of rejection?—Mr. BECK: No; I think the medical board makes its own diagnosis.

Commissions in the R.A.M.C.

Sir WILLIAM COLLINS asked the Under Secretary for War whether qualified medical men of American nationality were eligible for commissions in the Royal Army Medical Corps or for employment by the War Office; and whether medical men of Allied nationality holding registrable qualifications in this country were eligible for commissions in the Royal Army Medical Corps.—Mr. MACPHERSON answered: Qualified medical men of American nationality are not eligible to hold substantive commissions in the R.A.M.C., but may be employed by the War Office. Medical men of Allied nationality holding registrable qualifications in this country are not eligible to hold substantive commissions in the R.A.M.C.

Care of Nerve-strained Soldiers.

In reply to Mr. KING, Mr. MACPHERSON wrote: The War Office is taking steps to establish institutions for the care of nerve-strained soldiers and medical officers are being specially trained for the treatment of this class of case. Eight are already organised, four are in process of establishment, and others are contemplated. They will take patients in various numbers up to 500. The names of the medical officers entrusted with this undertaking are as follows: Lieutenant-Colonel Mott, Maudsley Section, 4th London General Hospital, S.E.; Major Rows, Red Cross Military Hospital, Maghuli; Major Worth, Springfield War Hospital, Upper Tooting, S.W.; Lieutenant-Colonel Fox, 4th Southern General Hospital, Plymouth; Major Hurst, Royal Victoria Hospital, Netley; Major Mackenzie, Glen Lomond War Hospital, Fife; Captain Culpin, 1st Southern General Hospital, Monyhull Section, Birmingham; Captain Clements, Bradford War Hospital, "Abram Peel" Section. The cases will be treated in military hospitals for such time as it is considered necessary to determine whether they will be fit for military service or should be discharged.

Whole-time Appointments and the Ministry of Pensions.

Mr. ALDEN asked the Minister of Pensions whether Sir John Collie was a whole-time officer of the Ministry of Pensions; if not, what other emoluments did he receive and from what bodies; and whether it was the policy of the Ministry of Pensions to place men in such important positions who were not giving their whole time to the service of the State.—Mr. HODGE replied: The answer to the first part of the question is in the affirmative. The remainder of the question does not therefore arise.

Forcible Feeding of Prisoners.

Arising out of questions regarding the forcible feeding of prisoners in Ireland, Mr. LYNCH asked the Chief Secretary for Ireland whether the legal position of medical men in this matter had ever been properly ascertained—that was to say, was the medical man forced by the prison rules to administer this discipline?—Mr. DUKE replied: That is a matter which, so far as legal authority goes, depends upon the dicta of the Lord Chief Justice of England some few years ago. The matter has never been decided authoritatively and expressly by any court exercising jurisdiction in criminal matters. It may be that some occasion will arise when it will have to be decided.

Army Estimates.

In the course of the debate on Army Estimates several references were made to medical matters in addition to the passage relating to the work of the Army Medical Service in the speech of Mr. MACPHERSON, the Under Secretary for War (reported last week).

Major WARING, referring to the official statement that the amount of sickness in the Salonika Army in 1917 had been reduced to two-thirds of what it was in 1916, while the death-rate had been reduced to one-third of the 1916 figures, said that the reduction was very satisfactory. At the same time the Army out there was to a very large extent an army of more or less sick men. It would be quite impossible to campaign there for month after month in a malarious country without feeling some injurious effects. As one who had served in that theatre of war, he spoke with warm appreciation of the efforts of the sanitary staff and the medical officers.

Captain CARR-GOMM said that he was glad to hear of the improvement at Salonika, but according to his information medical officers were doing all they could to avoid putting men down as primary cases of malaria.

Mr. PENNEFATHER raised the question of dental treatment in the Army. An unofficial committee of which he had been chairman considered the present system greatly at fault. It had come to the deliberate opinion that insufficient attention was paid to soldiers' teeth, both in this country and abroad. The provision made in the British Army for dental treatment fell very far below the provision made in the United States Army or in the Canadian, Australian, and New Zealand Expeditionary Forces. If it were assumed that all our commissioned dental officers, numbering 517, were abroad in our Expeditionary Forces, the number of dental officers would, on the Canadian and Australian standards, only be sufficient for half a million men. Our Army left this country after inadequate dental examination, and when our soldiers arrived abroad they were supplied with an inadequate number of dental officers to attend them. This caused neglect of the teeth by the soldiers, and this was serious. He urged that the Army Dental Service required overhauling. There were more than 300 qualified dentists serving in the Army as privates in the ranks. They ought to be employed professionally. He quoted the recommendations of the Committee.

Mr. FORSTER (Financial Secretary to the War Office), in the course of his reply to the debate, said that the honourable Member (Mr. Pennefather) had raised a matter of great importance affecting our man-power. He would certainly have the matter examined. The honourable Member impressed him with the facts—he did not doubt that they were facts—and he would do his best to see that consideration was given to them.

THURSDAY, FEB. 21ST.

Ministry of Health.

Mr. ALDEN asked the Chancellor of the Exchequer whether the Bill had yet been drafted for the proposed Ministry of Health; whether it had been approved by the Government; and when it was proposed to introduce it.

Major HILLS asked whether the Government intended to introduce a Bill for the establishment of a Ministry of Health.—Mr. BONAR LAW replied: I regret that I am not able to add anything to the previous replies which I have given on this subject.

Pay of R.A.M.C. Officers (Territorial).

Sir WATSON RUTHERFORD asked the Financial Secretary to the War Office whether any, and if so what, arrangements had now been made, and when they would take effect, for removing the comparatively unfair treatment of the Royal Army Medical Corps officers who were in the Territorial Force and placing them on a reasonable basis of equality as regards position, pay, and promotion with the Royal Army Medical Corps officers who were not in the Territorial Force.—Mr. FORSTER replied: The question was fully considered by the Cabinet Committee on officers' pay, and it was decided not to make the change proposed. These Territorial officers get the same emoluments as regular officers, and, like them, will get the new children's allowances at full rates in the junior ranks, while the officers serving under special contract will get half-rates only.

Surgical Appliances for Discharged Soldiers.

Colonel ASHLEY asked the Parliamentary Secretary to the Ministry of Pensions whether he was aware that where wounded soldiers were discharged with surgical appliances, such as surgical boots, no provision was made for the time when such appliances needed repair; and whether he could see his way to order that in the case of surgical boots a discharged soldier should be issued with two pairs instead of one, as at present.—Sir A. GRIFFITH-BOSCAWEN replied: In the case of surgical boots, it is the practice of the Ministry to provide two pairs, but to withhold the issue of the second pair for a short time to enable it to be seen whether the style of boot provided is satisfactory. With regard to surgical appliances generally, arrangements are made to effect repairs and renewals on their becoming necessary.

Medical Service of the Air Force.

Major BAIRD (Under Secretary to the Air Ministry), in the course of his speech on the motion to go into Committee on Air Force Estimates, said: The Medical Service of the Air Force is a point to which I called the attention of the House when the Bill for the constitution of the Air Force was proceeding through this House. A very strong and representative Committee under the honourable Member for the University of Edinburgh (Sir W. Watson Cheyne), at the request of the Air Board, drew up a scheme for a Medical Service for the Air Force. Obviously, as with every other arrangement in connexion with the amalgamation of a part of the Navy and Army, it was necessary that the assent of

the Navy and Army should be obtained to the adoption of any scheme connected with the change; and although I do not think that any objection was felt either by the Army or the Navy to the vast majority of the proposals which were submitted by this committee—it was a very strong committee—yet, not unnaturally, I think, in view of the heavy drain on the inadequate supply of medical men, which is made by the requirements of the countless campaigns which we are engaged in carrying on, the Army felt that the setting up at this moment of a fresh and altogether separate medical service might lead to friction and trouble. We have avoided friction and trouble of any kind, whatever people may say, either with the Navy or Army up to the present. Indeed, we have received their coöperation in countless ways. I may safely say that we have come to an arrangement which meets the needs of the Navy and the Army under which it will be possible to carry into effect the system advocated by the Committee of my honourable friend. After all, it is the system which is really of importance. The peculiar conditions under which men work in the Air Force, the strain imposed on heart, lungs, ears, nose, and other organs, entail the obligation of a peculiar branch of medical investigation and research. Indeed, it is absolutely indispensable that the medical officers responsible for the care of the officers and men serving in the air should specialise in that particular branch of medical science, and that they should not be shifted and changed indiscriminately from one place to another. That, I think, we have secured, and secured in this way. It has been agreed by the War Office and the Admiralty and assented to by the Treasury that the medical affairs of the Air Force are to be controlled by a committee responsible to the Air Council. The Committee is to be composed as follows: The Director-General of the Naval Medical Service, the Director-General of the Army Medical Service, the Vice-President of the Air Council, a Medical Administrator of the Air Force, an assistant medical administrator, one neurologist, one physician, one surgeon, one physiologist, and the secretary of the Medical Research Committee. The assistant medical administrator will act as secretary. The administrative medical officer will be given the substantial rank of surgeon-general, and the assistant administrative officer will be given the substantive rank of lieutenant-colonel. The medical administrator will nominate an executive staff of medical officers, and will arrange for the necessary clerical assistance. It will be necessary for the medical administrator to have discretion—this is important—to take action on any matter of urgency and of matters of detail which arise in the intervals between the meetings of the committee. Such action will, of course, be reported to the committee. As soon as possible the medical arrangements of Air Force will be centralised under the direction of the committee. All medical appointments will be made by the President of the Air Council on the nomination of the Committee. Officers who are appointed to the Air Force medical posts will be seconded to that Force. Temporary Air Force commissions will be given to all gentlemen, whether officers or not, who are appointed to executive medical posts, with the exception of a limited number of officers to be nominated by the committee for permanent commissions. All medical officers appointed to the Air Force will wear Air Force uniform. Those officers who are seconded from the Navy and Army will receive an assurance in writing that their prospects of promotion by selection in their own services will not be prejudiced thereby. The administrator of the medical service will have direct access to the Secretary of State and the medical arrangements for the Air Force will be dealt with in the Department of the Master-General of Personnel. So much for the medical arrangements.

Functions and Task of Air Medical Service.

Sir W. WATSON CHEYNE, speaking as the chairman of the Committee which had reported regarding the medical service of the Air Force, said that the problem with which its members had to deal was the occurrence of accidents in the air and how far medical science could take steps to avert them. When aviation first commenced all the accidents were attributed to faulty machines, but now the factor that had to be dealt with was not the flying machine but the human machine. The honourable Member proceeded to explain at some length to the House the effect of flying at high altitudes on health, and the changes in the atmospheric pressure and density of the air. After an aviator had mounted for some distance he came to air which did not contain sufficient oxygen, and the conditions induced faintness. Nowadays aviators were provided with oxygen for inhalation when they found it necessary to employ it. They differed very much in the heights to which they could go without the supply of oxygen. The heart and lungs were not the only organs suffering strain. Almost more important still was the nervous system. The nervous mechanism of the aviator was acting under great strain in maintaining equilibrium. Although the aviator was not conscious of any feeling of fear, the brain was conscious of the dangers surrounding him, and was getting exhausted in its efforts to overcome those dangers, and where the exhaustion came specially was in a rapid descent from a high altitude. Another important thing was the necessity of having true binocular vision, especially when travelling at great speed, and of having a very rapid connexion between the sight and the action. In fact, in selecting pilots one of the most important things to ascertain was whether the binocular vision was good and also the time it took between the aviator seeing and taking action. For research the first thing to do was to find out the cause of defaults in these directions and the way in which they were likely to be remedied. For such research physiologists and physicians were wanted, a set of trained medical men actually in contact with the aviators to furnish the statistics and observations on which to build up theories. That was the first thing to do in considering the Air Service. The next thing chiefly concerned the prevention of accidents, and the first form of protection was to keep out pilots who were likely to be subject to troubles. The other point in the way of avoiding accidents was that the medical man should be in constant association with the aviator, watching the effect of flying on him, finding out when he was getting stale, and should veto him being used in that state. The medical man should be about when the men were being selected for special flights in order to see that the men were in a fit condition to go up, and if an aviator was not fit the medical officer should be in a position to tell the commander that he must choose someone else. The medical man ought to be in a position to say to a man, "My dear boy, you are not in a fit state to go up this morning." In fact, a medical man of the Air Service ought to stand in much the same relation to the men as an athletic trainer to those whom he trained. If the work were to be done properly double the number of medical men would be needed at aerodromes. The honourable Member, in referring to air diseases, mentioned that one of the things to which airmen fell victims was distension of the intestine, leading to great pain and vomiting. As a matter of fact, the intestines became distended with gas probably on account of the diminution of the air pressure. The airman would get all right in the course of a few days if only he were given a rest. From these circumstances he drew the conclusion that the study of the special ailments and disabilities of flying men was as much a special subject as ophthalmology or bacteriology. No medical man could reasonably expect to become efficient in the study and treatment of those disabilities unless he devoted the whole of his time and energy to the subject. He must have adequate inducements. Every Government department had its own medical service except the Air Force. It was not very easy to institute it because the Navy and Army had taken all the available medical men. The idea of those associated with him on the Committee which investigated the matter was that because the Navy and Army between them apportioned off a certain number of doctors to the aerodromes to attend to the flying men, the whole of that medical service in England should be taken over as the nucleus of a larger and more satisfactory service. It had been decided, however, that the service was to be in commission, as it were, between the Navy and Army. That was not a proper service, but he had come to the conclusion that he would not be justified in refusing the compromise. Supposing the compromise had been refused, it would have taken two or three months before any progress would have been made, and in the interval no medical men would have been in training. He considered that it was better to take this compromise in the meantime, although he did not think it would work well or meet the requirements of the Air Force. After the war there must certainly be a separate Medical Air Service.

Major D. DAVIES remarked that all who had listened to the honourable Member (Sir Watson Cheyne) could not help being convinced by the very cogent arguments he brought forward in favour of a separate Medical Air Service.

Reply for the Air Ministry.

Major BAIRD said, in replying to the debate, that in supporting the arrangement which had been come to he was in the extraordinarily good company of the honourable Member for the University of Edinburgh. The Air Board accepted the report of the Committee over which he presided. In the discussion which took place the Air Board was only one of three parties to the discussion, but the other parties being in possession, which was nine-tenths of the law, were in a considerably stronger position, and it proved impossible to persuade them to accept the proposals of the Committee. However, the Air Board succeeded in persuading the Navy and the Army to agree to a system whereby they were made jointly responsible for the supply of medical men and for the success of the joint medical service, instead of being, as they would otherwise have been, in determined hostility. There could be no more fruitful cause of delay than departmental struggles. The main point of the arrangement which had been made was that there was provided a body of medical men trained to deal with the

particular aspect of cases which occurred only amongst airmen. He hoped that the scheme would be given a fair trial. It was only for the duration of the war. After the war it must be obvious that a separate medical service for the air was bound to come. The present arrangements were now under the Air Council, and they had secured the coöperation of the Naval Medical Service and the Army Medical Service. The medical administrator of the Air Force had direct access to the Secretary of State. In the meantime, the Air Council had gone as far as it could to make arrangements for the medical side of its work. A small staff at the Air Ministry was to be continuously at work on various problems.

TUESDAY, FEB. 26TH.

Recruiting Medical Boards.

Mr. HUGH LAW asked the Parliamentary Secretary to the Ministry of National Service how many Royal Army Medical Corps officers were now serving as presidents of recruiting medical boards; and would he give the names of such officers and indicate the boards over which they presided.—Mr. BECK replied: There are no Royal Army Medical Corps regular officers serving as presidents of recruiting medical boards under the Ministry of National Service. There are 10 retired officers of the Royal Army Medical Corps who are employed entirely in a civilian capacity by the Ministry. There are, in addition, 18 officers who hold commissions in the Royal Army Medical Corps, Territorial Force. All these gentlemen have returned to their civilian status.

Discharged Soldiers in Military Hospitals.

Mr. PENNEFATHER asked the Parliamentary Secretary to the Ministry of Pensions whether any arrangements had yet been made to enable discharged soldiers to enter military hospitals for any purposes; and, if so, would he state to what extent previous restrictions had been cancelled or modified.—Sir A. GRIFFITH-BOSCAWEN answered: Arrangements have been made with the War Office to place 300 beds in the military orthopædic hospitals at the disposal of the Ministry for discharged men, and the Army Council have agreed to admit cases of facial and jaw injury to their special hospitals. In addition instructions have been issued to the commands to make arrangements for the release of over 2000 beds, now reserved by the military authorities, in civil hospitals, as a first step towards the general release of all accommodation in these hospitals, and I am pressing the War Office to use all expedition possible in the matter.

WEDNESDAY, FEB. 27TH.

Food for Invalids.

Colonel C. LOWTHER asked the Parliamentary Secretary to the Ministry of Food what extra rations persons suffering from tuberculosis and other illnesses requiring special food were entitled to, and whether their medical advisers had power to prescribe extra food, and if so, how much.—Mr. CLYNES replied: I am sending the honourable gentleman a copy of a circular issued to the local Food Committees on this point. From this he will see that extra rations of butter, margarine, and meat for individuals may be allowed only in the case of patients suffering from tuberculosis and diabetes. Every application for an extra allowance of food must be made to the Food Control Committee, and must be accompanied by a certificate signed by the medical attendant in charge of the case stating the disease from which the patient is suffering and specifying the minimum allowance of the food in question which, in his opinion, is required by a patient in a week.

Appointments.

BUXTON, DUDLEY W., M.D. Lond., M.R.C.P. Lond., has been appointed Consulting Anæsthetist to the Royal Dental Hospital, London.

FORDEN, GEORGE, M.R.C.S., L.S.A., Medical Officer for the No. 2 District of the Bridgwater (Somerset) Board of Guardians.

KNOX, D. N., M.B., C.M. Glasg., F.R.F.P.S., one of the Medical Referees under the Workmen's Compensation Act for the Sheriffdom of Lanark.

MAURICE, G. T. K., C.M.G., Colonel, R.A.M.C., Commandant of the Royal Pavilion General Hospital, Brighton.

ROPER, C., B.C., M.D. Cantab., D.P.H. Oxford, Medical Superintendent for the Tehidy Sanatorium, Cornwall.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement columns
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer.

BEDFORD COUNTY HOSPITAL.—House Physician, unmarried. Salary £150 per annum, with board, &c.

BIRKENHEAD, BOROUGH HOSPITAL.—Junior House Surgeon. Salary £170 per annum, with board, &c.

BIRMINGHAM CITY EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

BRISTOL ROYAL INFIRMARY.—House Physician and House Surgeon. Salary at rate of £120 per annum, with board, &c.

BRIXTON DISPENSARY AND INFANT WELFARE CENTRE: FIRST-AID STATION (Red Cross), Water-lane, S.W.—Resident Medical Officer. Salary £200 per annum.

BURY INFIRMARY.—Junior House Surgeon. Salary £200 per annum, with board, &c.

CORNWALL COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £400 per annum.

DORSET COUNTY COUNCIL.—Temporary Female Assistant Medical Officer. Salary at rate of £350 per annum.

DUNDEE CORPORATION.—Temporary Assistant Tuberculosis Officer. Salary £350 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Assistant Resident Medical Officer. Salary £120 per annum, with board, &c.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W.—House Surgeon. Salary £100 per annum, with board, &c.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Resident Medical Officer. Salary £250 per annum, with board, &c.

LEEDS GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £100 per annum, with board, &c.

LEICESTER ROYAL INFIRMARY.—Resident Medical Officers. Salary £250 per annum, with board, &c.

MANCHESTER ROYAL INFIRMARY.—Assistant Resident Surgical Officer. Salary at rate of £200 per annum.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female Obstetric Assistant. Salary at rate of £50 per annum, with board, &c.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Physician and Anæsthetist for six months. Salary at rate of £250 per annum, with board, &c.

NOTTINGHAM EDUCATION COMMITTEE.—Temporary Assistant Medical Officer. Salary £350 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Female House Physician for six months. Salary at rate of £250 per annum, with board, &c.

OLDHAM ROYAL INFIRMARY.—Third House Surgeon. Salary £225 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer. Salary at rate of £60 per annum, with board, &c.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon for six months. Salary £150 per annum, with board, &c.

ROCHESTER, KENT, ST. BARTHOLOMEW'S HOSPITAL.—Resident Clinical Assistant. Salary at rate of £110 per annum, with board, &c.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, &c.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Senior House Surgeon. Salary £300 per annum, with board, &c.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon. Salary £150 per annum, with board, &c.

WHITECHAPEL DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Temporary Medical Officer. Salary £500 per annum.

WHITTINGHAM, PRESTON, LANCS., COUNTY ASYLUM.—Locum Tenens, unmarried. Salary £7 7s. per week, with board, &c.

WORCESTERSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £350 per annum.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Trim, at Stirling, and at Connor.

Births, Marriages, and Deaths.

BIRTHS.

MACLEAN.—On Feb. 23rd, at 39, Chalmers-street, Edinburgh, to the wife of the late Major W. L. Maclean, No. 1 Canadian Casualty Clearing Station, France—a daughter.

MAY.—On Feb. 23rd, at Woodleigh, Ware, Herts, the wife of George E. May, M.R.C.S., L.R.C.P., of a son.

MOSS.—On Feb. 13th, at Rosia Cottage, Gibraltar, the wife of Surgeon Lovel Moss, M.D., R.N., of a daughter.

ROBERTS.—On Feb. 21st, at Walcote, Winchester, the wife of George Roberts, F.R.C.S. Eng., of a son.

SMITH.—On Feb. 23rd, at Knatchbull-road, Camberwell, S.E., the wife of Captain Kenneth V. Smith, R.A.M.C. T.F., of a daughter.

MARRIAGES.

AVENT—KERR.—On Feb. 22nd, at St. Peter's Church, Sowerby, Mark Avent, M.A., M.B. Cantab., M.R.C.S., Captain, R.A.M.C. (S.R.), to Constance Catherine Collow, youngest daughter of John Collow Kerr, The Breck, Triangle, near Halifax.

DEATHS.

CADELL.—On Feb. 19th, at Moss-park, Rumbling Bridge, Scotland, Grace R. Cadell, L.R.C.P., L.R.C.S.

DELAMERE.—On Feb. 23rd, at the Military Hospital, Milton, Portsmouth, Percy Herbert Delamere, Captain, R.A.M.C., late Colonial Medical Service, Demerara.

GRAHAM.—On Feb. 23rd, Walter Ap Samuel James Graham, Major, R.A.M.C., aged 54.

PERRY.—On Feb. 19th, at Spalding, Lincs., Marten Perry, M.D., aged 91 years.

SCOTT.—On Feb. 17th, Richard James Herbert Scott, F.R.C.S. (E.), The Circus, Bath, aged 61.

SCOTT.—On Feb. 19th, in a Nursing Home in London, after an operation for appendicitis, Kenneth Mackenzie Scott, M.D., F.R.C.S. (Edin.), M.R.C.S. (Eng.), of 7, Manchester-square, W., only son of Thomas Graham Scott of Edinburgh. Funeral at Golder's Green Crematorium, Friday, Feb. 22nd.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MEETINGS OF SECTIONS.
Friday, March 8th.

EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—William Butler, M. Greenwood): at 5 30 P.M.
Paper:
Dr. M. Greenwood and Miss Cecily Thompson: An Epidemiological Study of the Food Problem.

HUNTERIAN SOCIETY, at the Royal Society of Medicine, 1, Wimpole-street, W.
WEDNESDAY, March 6th.—5 P.M., Discussion on Twilight Sleep (opened by Dr. G. Blacker).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.
TUESDAY AND THURSDAY, March 5th and 7th.—5 P.M., Goulstonian Lectures:—Dr. E. P. Poulton: Recent Views on Diabetes Mellitus, and on the Significance of Acidosis in Disease. (Lectures I. and II.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY, March 4th.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N. 15
MONDAY, March 4th.—2.30 P.M., Children's Diseases: Dr. T. R. Whipham. Gynæcological Diseases: Mr. F. L. Provis. Surgical Operations: Mr. E. Gillespie. 3 P.M., Medical In-patients: Dr. R. M. Leslie. 7 P.M., Venereal Clinic: Dr. Kinsella.
TUESDAY.—10 A.M., Surgical Operations: Mr. J. Howell Evans. 2 30 P.M., Medical Out-patients: Dr. A. G. Auld. Surgical Out-patients: Mr. Howell Evans. Nose, Ear, and Throat Diseases: Mr. C. H. Hayton. X Rays: Dr. Metcalfe. 3.30 P.M., Medical In-patients: Dr. A. J. Whiting.
WEDNESDAY.—2.30 P.M., Medical Out-patients: Dr. T. R. Whipham. Diseases of the Skin: The Dermatologist. Eye Diseases: Mr. A. S. Worton. Operations:—Nose, Ear, and Throat: Mr. Hayton. 4 P.M., Eyes: Mr. Worton. 5 P.M., Venereal Clinic: Mr. E. Gillespie and Mr. Benians.
THURSDAY.—2.30. P.M., Medical Out-patients, Dr. A. J. Whiting. Surgical: Mr. H. W. Carson. X Rays: Dr. Metcalfe. Gynæcological Operations: Dr. A. E. Giles. 3.30 P.M., Special Demonstration:—Selected Cases illustrating X Ray Diagnosis: Dr. J. Metcalfe.
FRIDAY.—2.30 P.M., Surgical Out-patients: Mr. Gillespie. Eye Diseases: Mr. A. S. Worton. 7 P.M., Venereal Clinic: Mr. E. Gillespie and Mr. Benians.
SATURDAY.—2.30 P.M., Surgical Operations: Mr. H. W. Carson.

ROYAL INSTITUTE OF PUBLIC HEALTH. 37, Russell-square, W.C. 1.
Course of Lectures and Discussions on Public Health Problems under War and After-war Conditions:—
WEDNESDAY, March 6th.—4 P.M., Lecture VIII.:—Prof. S. D. Adshead: Town Planning in its Relation to Public Health.

EDITORIAL NOTICES.

In consequence of the pressure on our space and the shortage of paper, the Editor may be compelled to abbreviate communications, as an alternative to their rejection, when time does not allow them to be reconsidered by their authors.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, *and when accompanied by blocks it is requested that the name of the author, and if possible of the article, should be written on the blocks to facilitate identification.*

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

We cannot undertake to return MSS. not used.

Offices: 423, STRAND, LONDON, W.C. 2.

MANAGER'S NOTICES.

TO SUBSCRIBERS IN THE UNITED STATES.

Messrs. Wm. Wood and Co., of New York, have relinquished their Agency for the supply of THE LANCET in the United States. The Manager of THE LANCET will be pleased to supply copies direct from the London Office to subscribers in the United States at the strictly prepaid rate of $8 for twelve months. Subscriptions may commence at any time. Drafts and Money Orders should be made payable to the Manager, Mr. CHARLES GOOD, 1, Bedford-street, Strand, London, W.C. 2, England.

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Subscribers abroad are particularly requested to note the rates of subscriptions given on advertisement page 4.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the rates shown, whatever be the weight of any of the copies so supplied.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)
THE LANCET Office, Feb. 27th, 1918.

Date.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 21	...	71	49	35	38	39	Fine
,, 22	0·01	63	55	37	49	49	Raining
,, 23	...	72	58	45	50	52	Fine
,, 24	...	85	59	44	44	50	Cloudy
,, 25	0·22	77	47	36	38	40	Do.
,, 26	...	61	51	33	37	39	Fine
,, 27	...	64	50	37	41	44	Overcast

Other information which we have been accustomed to give in these "Readings" is withheld for the period of the war.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, LIMITED, London.
The Free Press. By Hilaire Belloc. 2*s.* 6*d.* net.
The Treasures of Coal Tar. By Alexander Findlay, M.A., Ph.D., D.Sc., F.I.C.

ARNOLD, EDWARD, London.
Mrs. Holmes, Commandant. By R. E. Forbes. 5*s.* net.

BAILLIÈRE, TINDALL, AND COX, London.
Meat Inspection: With Special Reference to the Developments in Recent Years. By W. J. Howarth, M.D., D.P.H. 6*s.* net.
The Nauheim Treatment in England of Diseases of the Heart and Circulation. By Leslie Thorne Thorne, M.D., B.S Durh., M.R.C.S., L.R.C.P. Fifth edition. 5*s.* net.
Minor Maladies and Their Treatment. By Leonard Williams, M.D. Fourth edition. 7*s* 6*d.* net.
Handbook of Operative Surgery. By W. Ireland de C. Wheeler, M.D. Dub., F.R.C.S.I., Lieutenant-Colonel, R.A.M.C. With Introduction by Surgeon-General Sir Alfred Keogh, C.B. Third edition. 10*s.* 6*d.* net.
Field Sanitation. By C. G. Moor and R. A. Cooper, in Collaboration with other Officers and Men of the 1st London Sanitary Company. 2*s.* 6*d.* net.
Biological Aspects of Warfare. By Harry Campbell, M.D., F.R.C.P. Lond. Reprinted from THE LANCET. 1*s.* net.

BALE, JOHN, SONS, AND DANIELSSON, London.
Religion and Realities. By Henry Maudsley M.D. 3*s.* 6*d.* net.

BELL, G., AND SONS, London.
Experimental Inorganic Chemistry. By Alexander Smith. Sixth edition. 3*s.* 6*d.* net.
Laboratory Outline of College Chemistry. By A. Smith. 3*s.* net.
Introduction to Inorganic Chemistry. By A. Smith. Third edition, re-written. 8*s.* 6*d.* net.

CARNEGIE (THE) UNITED KINGDOM TRUST, Scotland.
Report on the Physical Welfare of Mothers and Children. Vol. III.

CASSELL AND CO., London.
Surgical Applied Anatomy. By Frederick Treves, Bt., G.C.V.O., C.B., LL.D., F.R.C.S. Eng. Seventh edition, revised by Arthur Keith, M.D., LL.D., F.R.C.S. Eng., F.R.S., and W. Colin Mackenzie, M.D. Melb., F.R.C.S. Edin., F.R.S.E. 10*s.* 6*d.* net.
A Manual of Physics for Medical Students. Second edition. By Hugh C. H. Candy, B.A., B.Sc. Lond., F.I.C. 7*s.* 6*d.* net.
The Art of Keeping Well. By R. Campbell Macfie, M.A., M.B., C.M., LL.D. 6*s.* 8*d.* net.

CHURCHILL, J. AND A., London.
Practice of Medicine. By Sir Frederick Taylor, Bt., M.D., President of the Royal College of Physicians. Eleventh edition. 24*s.* net.

FROWDE, H., AND HODDER AND STOUGHTON, London.
Military Surgery. By D. P. Penhallow, S.B., M.D. Harv., with Introduction by Sir Alfred Keogh, K.C.B. Second edition. 21*s.* net.

SAUNDERS (W. B.) COMPANY, London and Philadelphia.
History of Medicine. Suggestions for Study and Bibliographic Data. By Fielding H. Garrison, A.B., M.D., Principal Assistant Librarian, Surgeon General's Office, Washington, D.C. Second edition, revised and enlarged. Cloth, 28*s.* net.

Notes, Short Comments, and Answers to Correspondents.

COLONIAL HEALTH REPORTS.

Gambia.—A report on the Blue-Book of the Colony and Protectorate of the Gambia for the year 1916, drawn up by the Acting Colonial Secretary, Mr. E. St. John Jackson, states that no reliable estimates are available with regard to the total native population since the Census of 1911. In that year the total population of Bathurst was given as 7700 and that of the Protectorate as 138,401. No accurate information is obtainable in regard to births and deaths in the Protectorate. In Bathurst the birth-rate was 40·7 per 1000 and the death-rate 25·3. Infantile mortality did not drop appreciably below the high figure at which it normally stands. Out of 314 births there were 22 stillbirths and 74 deaths of infants of less than 1 year of age. Malarial fever was the most prevalent disease. 83 of 494 cases treated in the hospital in Bathurst were cases of this illness, and out of 7564 occasions on which out-patients were attended, malarial fever was treated 978 times. Yellow fever was diagnosed in the case of one native and proved fatal. One European official contracted blackwater fever, but made a satisfactory recovery. There was a small outbreak of small-pox at MacCarthy Island of 15 cases, 4 of which were fatal. Five patients were treated in Bathurst for trypanosomiasis, with 2 deaths. Pneumonia, a common disease in the colony at certain seasons, was less prevalent than in the previous year, and generally the health of the population was good. Great improvement has been made in the sanitation of the town by the destruction of the breeding places of mosquitoes by the use of oil, the clearing of bush, filling in low-lying areas, and stocking wells, drains, and permanent collections of water with larvæ-eating fish. The comparative rarity of mosquitoes in Bathurst now has led to the conclusion that by far the greater number of cases of malaria found in the town are imported from the Protectorate. At Bathurst the total rainfall for the year was 38·02 inches. The highest recorded temperature was 98° F. on April 15th, and the lowest 56° on Dec. 15th. The highest mean temperature in any month was reached in October, being 87°, and the lowest in December, 59·5°. At MacCarthy Island Meteorological Station—about 150 miles from Bathurst—the total rainfall was 37·75 inches. The highest recorded temperature was 114° in May, and the lowest 55° in January. The highest mean temperature was 91° in May, and the lowest 76·5° in January.

"ANIMAL LIFE AND HUMAN PROGRESS."

THE fourth of this series of lectures was delivered at King's College, London, on Feb. 20th, by Professor J. Arthur Thomson on Man and the Web of Life. The democratic and scientific tendencies are the two strongest of our age, said the lecturer, among the keynotes of the one being the perception of responsibilities and rewards, equality of opportunity and solidarity; and of the other accuracy, verification, prevision, and control. It was greatly desirable that these tendencies should be brought into close correlation and facts faced without prejudice, so that the meaning could be grasped of life and the correlation of organisms—the linking together of interests in the web of life—be understood. No creature lived or died to itself; animate nature was a vast system of linkages. Just as there was in the body a correlation of organs, so in the economy of nature there was a correlation of organisms. This fact had been recognised by many naturalists, but Darwin first discerned its subtlety and evolutionary importance. Professor Thomson showed how necessary it was for man to understand the interrelations of nature if he would avoid disastrous consequences, and gave many and various illustrations. The introduction of the rabbit in Australia, for example, and of the sparrow in America, had led to unfore-

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. H. W. Abbott, Lond.; Association for Moral and Social Hygiene, Lond.; Sergt. G. Austin; Anglo-French Drug Co., Lond.; Mrs. Aikman, Birnam, Guernsey; Académie de Médicine, Paris; *Archives de Médecine Navale*, Paris, Director of; Aerated Bread Co., Lond.; Capt. C. H. Attenborough, R.A.M.C.; Capt. S. W. Allworthy, R.A.M.C.

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C.—Mr. E. M. Corner, Lond.; Dr. A. C. Coles, Bournemouth; Messrs. T. Christy and Co., Lond.; Dr. J. A. Corrêa, S. Paulo; Messrs. J. and A. Churchill, Lond.; Messrs. E. Cook and Co., Lond.; Messrs. Colcleugh and Co., Winnipeg; Mr. J. Cabburn, Lond.; Mr. A. C. Corner, Lond.; Major W. S. Crosthwait, R.A.M.C.

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N.—National Health Insurance Commission, Lond.; New Zealand, Department of Public Health, Hospitals, and Charitable Aid; New Duff House Sanatorium, Banff, Sec. of; Dr. E. F. W. Nixey, Lond.; *National Food Journal*, Lond.; Messrs. F. Newbery and Sons, Lond.

O.—Oldham Royal Infirmary, Supt. of; Dr. G. Ord, Bexhill.

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Q.—Lieut. D. Quigley, R.A.M.C.; Queensland Government Statistician, Erisbane.

R.—Rockefeller Institute for Medical Research, New York; Royal Academy of Medicine in Ireland, Dublin; Royal Society of Medicine, Lond., Editor of; Reading Public Library, Chief Librarian of; Mr. W. Ramsay, Melbourne; Royal Dental Hospital of London, Russian Government Committee, Sanitary Section, Lond., Sec. of; Royal Salop Infirmary, Shrewsbury, Sec. of; Dr. A. Rose, Lond.; Col. O. Richards, A.M.S.; Royal Cornwall Infirmary, Truro, Sec. of; Royal Mineral Water Hospital, Bath, Registrar of; Royal Edinburgh Asylum, Morningside, Steward of; *Review of Neurology and Psychiatry*, Edinburgh, Editor of; Rockefeller Foundation, New York.

S.—Mr. R. Steele, Eastbourne; Capt. C. E. Sundell, R.A.M.C. Dr. W. J. E. Sumpter, Sheringham; Dr. C. Slater, Lond.; Dr. E. W. Saunders, St. Louis; Dr. G. A. Sutherland, Lond.; Dr. H. S. Smith, Eltham; Dr. H. Sainsbury, Lond.; State Department of Health of New Jersey, Trenton, Director of; Messrs. Saward, Baker and Co., Lond.; Mr. J. Symonds, Oxford; Dr. W. S. Smith, Burley; Stockport Infirmary, Sec. of; Capt. E. A. Shirvell, R.A.M.C.; Mr. J. R. C. Stephens, Ilorin; Messrs. A. de St. Dalmas and Co., Leicester; Mrs. J. B. Stobie, Oxford; Mrs. Sandwith, Lond.; Dr. A. E. Stansfeld, Lond.; St. Bartholomew's Hospital, Rochester, Sec. of.

T.—Mr. J. Thin, Edinburgh; Dr. D. M. Taylor, Sheffield; Sir Frederick Taylor, Bart., Lond.; Dr. C. H. Treadgold, Lond.; Capt. N. B. Taylor, C.A.M.C.; Triplex Safety Glass Co., Lond.; Trinity College, Dublin, Librarian of; Mr. H. Tilley, Lond.; Dr. O. P. Thomas.

U.—University of London Military Education Committee, Under-Secretary of State for the Colonies, Lond.; U.S. Naval Medical School, Washington, D.C., Medical Director of.

V.—Dr. M. A. Valiento, Cartagena.

W.—Prof. A. D. Waller, Lond.; West London Hospital Post-Graduate College; Dr. L. A. Weatherly, Bournemouth; Capt. F. W. Watkyn-Thomas, R.A.M.C.; Dr. A. Wai-Tak Woo, Lond.; Dr. F. G. Wallace, Lond.; West London Medico-Chirurgical Society; Lieut. R. Wade, R.A.M.C.; Dr. O. K. Williamson, Lond.; Western University Medical Library, London (Canada), Librarian of; Dr. Vera N. Williams, Bracknell; Messrs. W. Wesley and Son, Lond.; Capt. W. McC. Wanklyn, R.A.M.C.(T.); Capt. E. Williams, R.A.M.C.; Messrs. W. J. Wilcox and Co., Lond.; Major J. A. Walt; Messrs. W. Wood and Co., New York; Mr. R. Whitelaw, Aberdeen; Mr. B. S. Weymouth, Lond.; War Office Cinematograph Committee, Lond.; Dr. F. G. Waldo, Lond.

Y.—Yale University School of Medicine Library, Librarian of.

Z.—Mr. G. F. Zimmer, Lond.

(*Continued at foot of next page.*)

seen trouble; and carelessness in the disposal of refuse had encouraged the multiplication of rats, which cost this country enormous sums of money, while the animal played an important part in the spread of bubonic plague. The introduction of European trout into Tasmania had led to the destruction of dragon-flies by the fish, which in turn had led to the increase of flies destructive to crops and fruit trees. The obvious moral of these and other instances was that man should get to the facts making up the web of life before and not after he took drastic action. Some striking inter-relations in the web of life, said the lecturer, were illustrated by various diseases of men—for example, the life-cycle of the malaria parasite and that of bilharzia. Referring to the production of nitrogen and its application to intensive cultivation, he said that Professor Bottomley was doing important work in regard to the nitrification of peat—another illustration of the web of life. If we were to progress in civilisation more heed must be paid to the web of life, and we must keep in mind that temporary defeat might mean final victory. It was not the first or second consequences that counted but the sum of consequences. This way of looking at things was the accurate and scientific way. There could be no permanent sound social action which did not recognise the web of life and the multiplicity of the consequences that followed the single departure. Finally, he asked whether the web of life did not point logically to a League of Nations?

On March 6th, at 5.30 P.M., Dr. R. T. Leiper will take for his subject Some Inhabitants of Man and Their Migrations. Sir Patrick Manson, G.C.M.G., will preside.

CONTRACT PRACTICE IN THE FALKLAND ISLANDS.

To the Editor of THE LANCET.

SIR,—I noticed in your issue of Feb. 23rd an advertisement for a "Medical Man" to go out to the Falkland Islands, as Medical Officer to the Falkland Islands Company. I have held the appointment on and off for 11 years, and shall be pleased to give information to intending applicants, or to the successful candidate, if he should care to communicate with me at this address.

I am, Sir, yours faithfully,
C. N. FOLEY, L.R.C.P., M.R.C.S., L.S.A.,
late Medical Officer, Falkland Islands.

10, Tollington Park, N. 4. Tel., N. 2121. Feb. 24th, 1918.

WEEKLY MEAT RATIONS.

Messrs. Mathieson and Sons (16, Copthall-avenue, London, E.C. 2) have issued at 6*d*. a useful booklet of tables for rapidly calculating the purchasing value of meat coupons. The general handling of the ration card is concisely stated, and the tables will enable any housekeeper, without a facility for mental arithmetic, to see at a glance to what quantities of meat and meat substitutes the household is entitled in the week.

LIP-READING FOR DEAF DISABLED SOLDIERS.

BY dint of perseverance comprehension of speech can be regained by the majority of deaf people who have lost it, and a good illustration of this fact appears in the report by Dr. Alfred Eichholz, one of the medical officers of the Board of Education, on the work of the National Association for the Oral Instruction of the Deaf during the autumn of 1917. With the object of educating deaf ex-service men in lip-reading, Mr. G. S. Haycock, the director of the association, organised two sets of classes, one for the more severe cases of deafness in which the disablement was a total bar to employment, the other for those who could follow some form of employment during the day. The first category included 20 men who studied eight hours a week, and the second 30 men who studied five hours. In both cases progress exceeded expectation. After six weeks' instruction the majority could use their newly acquired faculty in speech-reading with considerable readiness. A portion of the other men reached almost the same degree of success at the end of three months, while the others required further patience and perseverance. It is hoped to make an extended application of this encouraging beginning.

YIDDISH MANUALS.

Dr. G. N. Meachen writes: In reply to "F.R.C.S." I can strongly recommend "First Steps in Yiddish," by H. Heathcote (London: 71, Hamilton House, E.C., 1*s*. net), and Harkavy's English-Jewish Pocket Dictionary, 25,000 words (Hebrew Publishing Co., Brooklyn, New York), both of which were most useful to me when I was working in the East-End of London.

Dr. Charles Porter writes: In reply to the inquiry of "F.R.C.S.," I can recommend an "Elementary Manual of the Yiddish Language, with Exercises and Conversations," compiled by Jacob R. Mazin, and published by R. Mazin and Co., of 65, Old Montague-street, N.E., in 1907. R. Mazin and Co. are publishers, importers, and exporters of Jewish books, and I notice in their list a number of English-Yiddish and Yiddish-English dictionaries.

Mr. Richard Jaschke, bookseller, 78, Charing Cross-road, London, W.C., informs us that he can supply the following at the price of 6*s*.: "A Dictionary of the Yiddish Language (Yiddish-English)," compiled by Alexander Harkavy, published in New York. The same author has issued a "Complete English-Jewish Dictionary," now in its sixth edition. Mr. Jaschke supplies this at 12*s*.

POST HOC SED NON PROPTER HOC.

IN the *Vaccination Inquirer* of Dec. 1st appeared the recital of a case of death from tetanus after vaccination occurring at St. Louis, Mo., in the previous October. We have now received from Dr. G. S. Miller and Dr. E. W. Saunders, who were in charge of the case, full clinical details, from which it is evident that another probable source of infection was present in the case, while thousands of children in the city were vaccinated from the same batch of points without acquiring tetanus.

WANTED, A HOME.

To the Editor of THE LANCET.

SIR,—Can any of your readers tell me of a home or hospital where the widow of a doctor, aged 72, and suffering from paralysis agitans and premature old age, can be received? Expenses must not exceed 3½ guineas a week and the home should be out of London.

I am, Sir, yours faithfully,
FRANK G. WALLACE.

273, Earl's Court-road, S.W.5, Feb. 21st, 1918.

(*Continued from previous page.*)

Letters, each with enclosure, are also acknowledged from—

A.—Surg. D. K. Adams, R.N.; Messrs. Arnold and Sons, Lond.; A. A.; Addenbrooke's Hospital, Cambridge, Sec. of; Anglo-American Pharmaceutical Co., Croydon, Sec. of.

B.—Bishopstone House, Bedford, Sec. of; Mr. E. Bougault, Paris; Bedford County Hospital, Sec. of; Bristol Eye Hospital, Sec. of; Birkenhead Borough Hospital, Treas. to the; Brixton Dispensary, Lond., Sec. of; Birmingham Education Committee, Treas. to the; Dr. H. Barber, Derby; Mr. J. Brindley-James, Lond.

C.—Chief Medical Officer, Manila; Dr. E. F. Cyriax, Lond.; C. A. J.; Lieut. G. B. Charnock, R.A.M.C.; Coventry and Warwickshire Hospital, Sec. of; Cunard S.S. Co., Liverpool; Miss Carlill, Worthing; Capt. M. A. Cassidy, R.A.M.C.; Carnarvonshire County Council, Carnarvon, Treas. to the; Messrs. J. and A. Carter, Lond.; Major Churchill.

D.—Mr. P. Dempsey, Dublin; Mrs. Dickson, Buxton; Dumfries and Galloway Royal Infirmary, Sec. of.

E.—Messrs. Eason and Son, Dublin; E., Norwich.

F.—Messrs. Ferranti, Hollinwood; Messrs. Fannin and Co., Dublin; Mr. S. Foster, Clacton on Sea; Fellows Medical Manufacturing Co., New York; Fulham Tuberculosis Dispensary, Lond., Sec. of; Mr. A. Foerster, Lond.; Mr. R. H. Fleming, Glasgow.

G.—Capt. W. Gilmour, R.A.M.C.; Messrs. Gordon and Gotch, Lond.; Mr. H. C. Green, Lond.; Mr. G. T. Girdler, Auckland, New Zealand; Capt. G. W. Goodhart, R.A.M.C.; Major H. D. Gillies, R.A.M.C.; Dr. S. Gill, Formby; G. D. H. W.

H.—Dr. J. Hunter, Invercargill; Messrs. J. Heywood, Manchester; Capt. A. B. Howitt, R.A.M.C.; Mr. G. W. Homan, Lichfield; Mr. H. B. Harding, Porth; Messrs. Heinemann, Lond.; Messrs. Abel Heywood and Son, Manchester; Messrs. Hopkins, Lond.

I.—Dr. M. Ivens.

J.—Jeyes' Sanitary Compounds Co., Lond.

K.—Mr. S. Kodachi, Tokyo; K. C. E.

L.—Mr. E. M. Little, Lond.; Sir H. B. Longhurst, Hampton Hill; Messrs. H. K. Lewis and Co., Lond.; Dr. F. Lishman, Bexhill; Messrs. J. Lyons and Co., Lond.; Lister Institute, Lond., Sec. of; Leeds Corporation, Treas. to the; London Press Exchange, Sec. of; Messrs. Longmans, Green, and Co., Lond.

M.—Dr. E. Matthew, Edinburgh; Dr. F. St. G. Mivart, Lond.; Mr. A. Mantell, Parkstone; Dr. S. M. Milliken, New York; The J. A. Majors Co., New Orleans; Messrs. Menzies and Co., Edinburgh; Manchester City Education Committee, Clerk to the; Dr. D. McColl, Tamworth; Mrs. Maclean, Edinburgh; M. Mitton, Lond.

N.—North Lonsdale Hospital, Barrow-in-Furness, Sec. of.

O.—Dr. R. Orr, Southampton; Dr. G. Olano, Lima.

P.—Mr. F. G. Pulman, Lond.; Miss Pritchard, Lond.; Messrs. Parke, Davis, and Co., Lond.; Prince of Wales's General Hospital, Tottenham, Sec. of; Mr. F. J. Pearson, Owston Ferry.

R.—The Retreat, York, Sec. of; Mrs. Robb-Smith, Chislehurst; Rotherham Hospital, Sec. of; Messrs. G. Routledge and Co., Lond.; Dr. A. Routh, Lond.

S.—Capt. F. B. Smith, R.A.M.C.; Mr. C. J. S. Stocker, Budleigh Salterton; Smedleys Hydropathic Co., Matlock, Director of; S. G. W.; Southend-on-Sea Corporation, Treas. to the; Messrs. Singer and Co., Coventry; Messrs. Spiers and Pond, Lond.; Mr. H. C. Somervell, Bournemouth; St. Anthony's Hospital, North Cheam, Sec. of; Swansea Corporation, Treas. to the.

T.—Mr. J. Tubb-Thomas, Trowbridge; Mr. F. Treves, Genoa; Staff Surg. D. D. Turner, R.N.; Mrs. Thwaites, Lond.

V.—Messieurs Vigot frères, Paris; Mr. D. Vinrace, Lond.

W.—Miss E. Whitaker, Sheffield; Mr. J. Wanamaker, Lond.; West Kent General Hospital, Maidstone, Sec. of; Mr. A. Wilson, Lond.; Dr. G. R. Ward, Sevenoaks; Mr. T. Wyse, Margate; Mr. A. T. Wooldridge, Camberley; Dr. R. F. C. Ward, Harrogate; Dr. H. de C. Woodcock, Leeds; West Riding County Council, Wakefield, Acct. to the; Whitechapel Dispensary for the Prevention of Consumption, Lond., Sec. of.